

## SEARCH REQUEST FORM

## Scientific and Technical Information Center

Requester's full Name: Everett White Examiner #: 67057 Date: 06/16/2003Art Unit: 1623 Phone Number 308-4621 Serial Number: 10/007,866Mail Box: CMI-8B19 and Bldg/Room Location: CMI-8D12 Results Format Preferred (circle): PAPER DISK E-MAIL**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be search Include the elected species or structures, key words, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See Bib Data SheetInventors (please provide full names): See Bib Data SheetEarliest priority Filing Date: See Bib Data Sheet

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search the biodegradable, oxidized cellulose ester of Claims 1-12, the composition of Claim 35, and the method of making an oxidized cellulose ester of claims 13-34. Also, please search formulas I and II of the Oxidized cellulose ester in Claim 4. Claims 1 and 13 are the independent claims. A copy of the claims and abstract is provided.

The Bib Data Sheet which discloses the inventor names, title of the invention, and the earliest priority filing date is also provided.

\*\*\*\*\*

## STAFF USE ONLY

Searcher: Point of ContactSearcher Phone: Alexandra WacławiwSearcher Location: Technical Info. SpecialistSearcher Local Mail: 308-4491Date Searcher Picked Up: 6-23-03Date Completed: 6-23-03

Searcher Prep &amp; Review Time: \_\_\_\_\_

Clerical prep time: \_\_\_\_\_

Online Time: \_\_\_\_\_

PTO-1590 (1-2000)

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) \_\_\_\_\_

Bibliographic ☒ \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN \_\_\_\_\_

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Dr. Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

WWW/Internet \_\_\_\_\_

Other (specify) \_\_\_\_\_

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=&gt; d his

(FILE 'HOME' ENTERED AT 09:57:20 ON 23 JUN 2003)

FILE 'REGISTRY' ENTERED AT 09:57:38 ON 23 JUN 2003

E METHYLENE CHLORIDE/CN  
L1 1 S E3  
E DMSO/CN  
L2 1 S E3  
E DMA/CN  
L3 3 S E3  
E DMF/CN  
L4 1 S E3  
E N-METHYL-2-PYRROLIDONE/CN  
L5 1 S E3  
L6 1 S DIOXANE/CN  
L7 8 S L1-L6  
SAVE L7 TEMP SOLV/A  
E SULFURIC ACID/CN  
L8 1 S E3  
E O-PHOSPHORIC ACID/CN  
E PHOSPHORIC ACID/CN  
L9 1 S E3  
E PERCHLORIC ACID/CN  
L10 1 S E3  
E ZINC CHLORIDE/CN  
L11 1 S E3  
L12 4 S L8-L11  
SAVE L12 TEMP ACIDCAT/A  
E CELLULOSE  
E CELLULOSE/CN  
L13 1 S E3

FILE 'HCAPLUS' ENTERED AT 10:01:10 ON 23 JUN 2003

L14 67745 S L13  
L15 191781 S L14 OR CELLULOSE  
L16 13592 S L15 (L) (REACTION? OR RCT/RL OR RACT/RL)  
L17 105568 S ACYL?  
L18 84 S L17 (L) L16  
L19 1 S L18 (L) OXID?  
L20 667 S L16 (L) (OXIDN OR OXIDIZ? OR OXIDATI?)  
L21 3 S L20 AND (ACYLA? OR ACYLA?/AB)  
L22 92 S L15 (L) (OXIDN OR OXIDIZ? OR OXIDATI?) (L) ESTER#  
L23 1 S L22 AND (ACYLA? OR ACYLA?/AB)  
L24 23845 S L7 (L) SOL?  
L25 1 S L24 AND L22  
L26 109 S L24 AND L16  
L27 6 S L26 AND (ACYLA? OR ACYLA?/AB)  
L28 119950 S ACID (L) CATALY?  
L29 255486 S L12 OR L28  
L30 859 S L29 AND L16  
L31 623 S L12 AND L30

FILE 'STNGUIDE' ENTERED AT 10:08:22 ON 23 JUN 2003

FILE 'STNGUIDE' ENTERED AT 10:18:59 ON 23 JUN 2003

White 10/007,866

FILE 'STNGUIDE' ENTERED AT 10:21:36 ON 23 JUN 2003

FILE 'STNGUIDE' ENTERED AT 10:26:39 ON 23 JUN 2003

FILE 'HCAPLUS' ENTERED AT 10:26:44 ON 23 JUN 2003

L32	6 S L17 AND L31
L33	5 S L31 AND ACYL?/AB
L34	15 S L19 OR L21 OR L23 OR L25 OR L27 OR L32 OR L33
L35	3 S L20 (L) BIODEGR?
L36	18153 S CARBOXY? (L) (GROUP? OR GP##)
L37	175 S L36 AND L16
L38	38 S L37 AND L20
L39	2 S L38 AND L12
L40	19 S L34 OR L35 OR L39

=> fil reg

FILE 'REGISTRY' ENTERED AT 10:35:54 ON 23 JUN 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 22 JUN 2003 HIGHEST RN 535920-83-3  
DICTIONARY FILE UPDATES: 22 JUN 2003 HIGHEST RN 535920-83-3

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STN Note 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d que 17;d 17 rn cn 1-8

L1	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	"METHYLENE CHLORIDE"/CN
L2	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	DMSO/CN
L3	3	SEA FILE=REGISTRY	ABB=ON	PLU=ON	DMA/CN
L4	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	DMF/CN
L5	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	N-METHYL-2-PYRROLIDONE/CN
L6	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	DIOXANE/CN
L7	8	SEA FILE=REGISTRY	ABB=ON	PLU=ON	(L1 OR L2 OR L3 OR L4 OR L5 OR L6)

L7 ANSWER 1 OF 8 REGISTRY COPYRIGHT 2003 ACS  
RN 2801-68-5 REGISTRY  
CN Benzenethanamine, 2,5-dimethoxy-.alpha.-methyl- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phenethylamine, 2,5-dimethoxy-.alpha.-methyl- (6CI, 7CI, 8CI)  
OTHER NAMES:  
CN (.+-.)-1-(2,5-Dimethoxyphenyl)-2-aminopropane  
CN (.+-.)-2,5-Dimethoxyamphetamine  
CN 1-(2,5-Dimethoxyphenyl)-2-aminopropane  
CN 1-(2,5-Dimethoxyphenyl)isopropylamine  
CN 2,5-Dimethoxyamphetamine  
CN 2-(2-Aminopropyl)hydroquinone dimethyl ether  
CN **DMA**

L7 ANSWER 2 OF 8 REGISTRY COPYRIGHT 2003 ACS  
RN 872-50-4 REGISTRY  
CN 2-Pyrrolidinone, 1-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 1-Methyl-2-pyrrolidinone  
CN 1-Methyl-2-pyrrolidone

CN 1-Methyl-5-pyrrolidinone  
 CN 1-Methylazacyclopentan-2-one  
 CN 1-Methylpyrrolidone  
 CN AgsolEx 1  
 CN M-Pyrol  
 CN Microposit 2001  
 CN N 0131  
 CN N-Methyl-.alpha.-pyrrolidinone  
 CN N-Methyl-.alpha.-pyrrolidone  
 CN N-Methyl-.gamma.-butyrolactam  
 CN N-Methyl-2-ketopyrrolidine  
 CN N-Methyl-2-pyrrolidinone  
 CN **N-Methyl-2-pyrrolidone**  
 CN N-Methylbutyrolactam  
 CN N-Methylpyrrolidone  
 CN NMP  
 CN Pharnasolve  
 CN Pyrol M  
 CN SL 1332

L7 ANSWER 3 OF 8 REGISTRY COPYRIGHT 2003 ACS

RN 144-21-8 REGISTRY

CN Arsonic acid, methyl-, disodium salt (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Methanearsonic acid, disodium salt (8CI)

OTHER NAMES:

CN Ansar 184  
 CN Ansar 8100  
 CN Arrhenal  
 CN Arsinyll  
 CN Arsynal  
 CN Cacodyll New  
 CN Cralo-E-rad  
 CN Diarsen  
 CN Disodium methanearsonate  
 CN Disodium methylarsenate(2-)  
 CN Disodium methylarsonate  
 CN Disomear  
 CN **DMA**  
 CN DMA 100  
 CN DSMA  
 CN Methar  
 CN Metharsan  
 CN Metharsinat  
 CN Neo-Asycodile  
 CN Sodar  
 CN Somar  
 CN Stenosine  
 CN Tonarsan  
 CN Tonarsin

L7 ANSWER 4 OF 8 REGISTRY COPYRIGHT 2003 ACS

RN 127-19-5 REGISTRY

CN Acetamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Acetdimethylamide  
 CN Dimethylacetamide  
 CN Dimethylamide acetate

CN **DMA**  
 CN DMAA  
 CN DMAc  
 CN N,N-Dimethylacetamide  
 CN N,N-Dimethylethanamide

L7 ANSWER 5 OF 8 REGISTRY COPYRIGHT 2003 ACS

RN 123-91-1 REGISTRY  
 CN 1,4-Dioxane (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN p-Dioxane (8CI)  
 OTHER NAMES:  
 CN 1,4-Diethylene dioxide  
 CN 1,4-Dioxacyclohexane  
 CN 1,4-Dioxan  
 CN 1,4-Dioxin, tetrahydro-  
 CN Diethylene dioxide  
 CN Diethylene ether  
 CN Diethylene oxide  
 CN Dioxan  
 CN **Dioxane**  
 CN Dioxyethylene ether  
 CN NE 220  
 CN p-Dioxan

L7 ANSWER 6 OF 8 REGISTRY COPYRIGHT 2003 ACS

RN 75-09-2 REGISTRY  
 CN Methane, dichloro- (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Aerothene MM  
 CN Dichloromethane  
 CN F 30  
 CN F 30 (chlorocarbon)  
 CN Freon 30  
 CN HCC 30  
 CN Khladon 30  
 CN Metaclen  
 CN Methane dichloride  
 CN **Methylene chloride**  
 CN Methylene dichloride  
 CN Narkotil  
 CN R 30  
 CN R 30 (refrigerant)  
 CN Solaesthin  
 CN Soleana VDA  
 CN Solmethine

L7 ANSWER 7 OF 8 REGISTRY COPYRIGHT 2003 ACS

RN 68-12-2 REGISTRY  
 CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Dimethylformamide  
 CN **DMF**  
 CN DMF (amide)  
 CN DMFA  
 CN N,N-Dimethylformaldehyde  
 CN N,N-Dimethylformamide  
 CN N,N-Dimethylmethanamide

CN N-Formyldimethylamine  
CN Virodene-P 058

L7 ANSWER 8 OF 8 REGISTRY COPYRIGHT 2003 ACS  
RN 67-68-5 REGISTRY

CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:

CN Methyl sulfoxide (8CI)

OTHER NAMES:

CN Demavet  
CN Demeso  
CN Demsodrox  
CN Dimethyl sulfoxide  
CN Dimethyl sulphoxide  
CN Dimexide  
CN Dimexidum  
CN Dipirartril-tropico  
CN DMS 70  
CN DMS 90  
CN **DMSO**  
CN Dolicur  
CN Domoso  
CN Dromisol  
CN Durasorb  
CN Gamasol 90  
CN Herpid  
CN Hyadur  
CN Infiltrina  
CN Kemsol  
CN Rimso 50  
CN Sclerosol  
CN Somipront  
CN SQ 9453  
CN Sulfinylbismethane  
CN Syntexan

=> d que l12;d l12 rn cn 1-4

L8	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	"SULFURIC ACID"/CN
L9	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	"PHOSPHORIC ACID"/CN
L10	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	"PERCHLORIC ACID"/CN
L11	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	"ZINC CHLORIDE"/CN
L12	4	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	(L8 OR L9 OR L10 OR L11)

L12 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2003 ACS  
RN 7664-93-9 REGISTRY

CN **Sulfuric acid (8CI, 9CI)** (CA INDEX NAME)

OTHER NAMES:

CN BOV  
CN Brimstone acid  
CN Contact acid  
CN Dihydrogen sulfate  
CN Dipping acid  
CN Oil of vitriol  
CN Sulphuric acid

CN Vitriol brown oil

L12 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2003 ACS

RN 7664-38-2 REGISTRY

CN **Phosphoric acid (7CI, 8CI, 9CI)** (CA INDEX NAME)

OTHER NAMES:

CN 3M Etching Liquid

CN Amberphos 54

CN C 134

CN C 134 (acid)

CN C 434

CN C 434 (acid)

CN Conditioner 36

CN Decon 4512

CN E 338

CN EVITs

CN HQ 54

CN K-etchant

CN Kefo

CN Mikro Klene DF

CN Orthophosphoric acid

CN Panavia Etching Agent

CN Sonac

CN SPA 2

CN SPA 2 (catalyst)

CN TG 434

CN Total Etch

CN Ultra-Etch Gel

CN Ultraetch

CN Uni-Etch

CN WC-Reiniger

L12 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2003 ACS

RN 7646-85-7 REGISTRY

CN **Zinc chloride (ZnCl<sub>2</sub>) (9CI)** (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Zinc chloride (6CI, 7CI, 8CI)**

OTHER NAMES:

CN Butter of zinc

CN Knittex ZH

CN Zinc Butter

CN Zinc dichloride

CN Zinc(II) chloride

L12 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2003 ACS

RN 7601-90-3 REGISTRY

CN **Perchloric acid (8CI, 9CI)** (CA INDEX NAME)

=> d que 113;d 113

L13 1 SEA FILE=REGISTRY ABB=ON PLU=ON CELLULOSE/CN

L13 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

RN 9004-34-6 REGISTRY

CN **Cellulose (8CI, 9CI)** (CA INDEX NAME)



OTHER NAMES:

CN .alpha.-Cellulose  
 CN .beta.-Amylose  
 CN 3mAQUACEL  
 CN 402-2B  
 CN Alicell LV  
 CN Alpha Cel PB 25  
 CN Alphafloc  
 CN Arbocel  
 CN Arbocel B 00  
 CN Arbocel B 600  
 CN Arbocel B 600/30  
 CN Arbocel B 800  
 CN Arbocel B 820C  
 CN Arbocel BC 1000  
 CN Arbocel BC 200  
 CN Arbocel BE 600  
 CN Arbocel BE 600/10  
 CN Arbocel BE 600/20  
 CN Arbocel BE 600/30  
 CN Arbocel BEM  
 CN Arbocel BFC 200  
 CN Arbocel BWW 40  
 CN Arbocel DC 1000  
 CN Arbocel FD 00  
 CN Arbocel FD 600/30  
 CN Arbocel FIC 200  
 CN Arbocel FT 40  
 CN Arbocel FT 600/30H  
 CN Arbocel G 350  
 CN Arbocel TF 30HG  
 CN Arbocel TP 40  
 CN Avicel  
 CN Avicel 101  
 CN Avicel 102  
 CN Avicel 2330  
 CN Avicel 2331  
 CN Avicel 955  
 CN Avicel CL 611  
 CN Avicel E 200  
 CN Avicel F 20  
 CN Avicel FD 100  
 CN Avicel FD 101  
 CN Avicel FD-F 20  
 CN Avicel M 06  
 CN Avicel M 15  
 CN Avicel M 25  
 CN Avicel NT 020  
 CN Avicel NT 050  
 CN Avicel PH 101  
 CN Avicel PH 102

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for  
 DISPLAY

DR 12656-52-9, 9012-19-5, 9037-50-7, 9076-30-6, 58968-67-5, 99331-82-5,  
 67016-75-5, 67016-76-6, 51395-76-7, 61991-21-7, 61991-22-8, 68073-05-2,  
 70225-79-5, 74623-16-8, 75398-83-3, 77907-70-1, 84503-75-3, 89468-66-6,  
 39394-43-9, 209533-95-9

MF Unspecified

CI PMS, COM, MAN  
PCT Manual registration, Polyother, Polyother only  
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,  
CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST,  
CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, IFICDB,  
IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NAPRALERT, NIOSHTIC,  
PIRA, PROMT, RTECS\*, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL,  
VTB  
(\*File contains numerically searchable property data)  
Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
67747 REFERENCES IN FILE CA (1957 TO DATE)  
7493 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
67800 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> fil hcaplud  
'HCAPLUD' IS NOT A VALID FILE NAME  
SESSION CONTINUES IN FILE 'REGISTRY'

=> fil hcaplus  
FILE 'HCAPLUS' ENTERED AT 10:36:37 ON 23 JUN 2003  
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FILE COVERS 1907 - 23 Jun 2003 VOL 138 ISS 26  
FILE LAST UPDATED: 22 Jun 2003 (20030622/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his l14-

(FILE 'REGISTRY' ENTERED AT 09:57:38 ON 23 JUN 2003)

FILE 'HCAPLUS' ENTERED AT 10:01:10 ON 23 JUN 2003

L14 67745 S L13  
L15 191781 S L14 OR CELLULOSE  
L16 13592 S L15 (L) (REACTION? OR RCT/RL OR RACT/RL)  
L17 105568 S ACYL?  
L18 84 S L17 (L) L16  
L19 1 S L18 (L) OXID?

L20 667 S L16 (L) (OXIDN OR OXIDIZ? OR OXIDATI?)  
 L21 3 S L20 AND (ACYLA? OR ACYLA?/AB)  
 L22 92 S L15 (L) (OXIDN OR OXIDIZ? OR OXIDATI?) (L) ESTER#  
 L23 1 S L22 AND (ACYLA? OR ACYLA?/AB)  
 L24 23845 S L7 (L) SOL?  
 L25 1 S L24 AND L22  
 L26 109 S L24 AND L16  
 L27 6 S L26 AND (ACYLA? OR ACYLA?/AB)  
 L28 119950 S ACID (L) CATALY?  
 L29 255486 S L12 OR L28  
 L30 859 S L29 AND L16  
 L31 623 S L12 AND L30

FILE 'STNGUIDE' ENTERED AT 10:08:22 ON 23 JUN 2003

FILE 'STNGUIDE' ENTERED AT 10:18:59 ON 23 JUN 2003

FILE 'STNGUIDE' ENTERED AT 10:21:36 ON 23 JUN 2003

FILE 'STNGUIDE' ENTERED AT 10:26:39 ON 23 JUN 2003

FILE 'HCAPLUS' ENTERED AT 10:26:44 ON 23 JUN 2003

L32 6 S L17 AND L31  
 L33 5 S L31 AND ACYL?/AB  
 L34 15 S L19 OR L21 OR L23 OR L25 OR L27 OR L32 OR L33  
 L35 3 S L20 (L) BIODEGR?  
 L36 18153 S CARBOXY? (L) (GROUP? OR GP##)  
 L37 175 S L36 AND L16  
 L38 38 S L37 AND L20  
 L39 2 S L38 AND L12  
 L40 19 S L34 OR L35 OR L39

FILE 'REGISTRY' ENTERED AT 10:35:54 ON 23 JUN 2003

FILE 'HCAPLUS' ENTERED AT 10:36:37 ON 23 JUN 2003

=> d que nos l40

L1 1 SEA FILE=REGISTRY ABB=ON PLU=ON "METHYLENE CHLORIDE"/CN  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON DMSO/CN  
 L3 3 SEA FILE=REGISTRY ABB=ON PLU=ON DMA/CN  
 L4 1 SEA FILE=REGISTRY ABB=ON PLU=ON DMF/CN  
 L5 1 SEA FILE=REGISTRY ABB=ON PLU=ON N-METHYL-2-PYRROLIDONE/CN  
 L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON DIOXANE/CN  
 L7 8 SEA FILE=REGISTRY ABB=ON PLU=ON (L1 OR L2 OR L3 OR L4 OR L5  
 OR L6)  
 L8 1 SEA FILE=REGISTRY ABB=ON PLU=ON "SULFURIC ACID"/CN  
 L9 1 SEA FILE=REGISTRY ABB=ON PLU=ON "PHOSPHORIC ACID"/CN  
 L10 1 SEA FILE=REGISTRY ABB=ON PLU=ON "PERCHLORIC ACID"/CN  
 L11 1 SEA FILE=REGISTRY ABB=ON PLU=ON "ZINC CHLORIDE"/CN  
 L12 4 SEA FILE=REGISTRY ABB=ON PLU=ON (L8 OR L9 OR L10 OR L11)  
 L13 1 SEA FILE=REGISTRY ABB=ON PLU=ON CELLULOSE/CN  
 L14 67745 SEA FILE=HCAPLUS ABB=ON PLU=ON L13  
 L15 191781 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 OR CELLULOSE/OBI  
 L16 13592 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 (L) (REACTION?/OBI OR  
 RCT/RL OR RACT/RL)  
 L17 105568 SEA FILE=HCAPLUS ABB=ON PLU=ON ACYL?/OBI  
 L18 84 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 (L) L16  
 L19 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 (L) OXID?/OBI

L20 667 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 (L) (OXIDN/OBI OR  
OXIDIZ?/OBI OR OXIDATI?/OBI)  
L21 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND (ACYLA?/OBI OR  
ACYLA?/AB)  
L22 92 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 (L) (OXIDN/OBI OR  
OXIDIZ?/OBI OR OXIDATI?/OBI) (L) ESTER#/OBI  
L23 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 AND (ACYLA?/OBI OR  
ACYLA?/AB)  
L24 23845 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 (L) SOL?/OBI  
L25 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 AND L22  
L26 109 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 AND L16  
L27 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L26 AND (ACYLA?/OBI OR  
ACYLA?/AB)  
L28 119950 SEA FILE=HCAPLUS ABB=ON PLU=ON ACID/OBI (L) CATALY?/OBI  
L29 255486 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 OR L28  
L30 859 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L16  
L31 623 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 AND L30  
L32 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND L31  
L33 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 AND ACYL?/AB  
L34 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 OR L21 OR L23 OR L25 OR  
L27 OR L32 OR L33  
L35 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 (L) BIODEGR?/OBI  
L36 18153 SEA FILE=HCAPLUS ABB=ON PLU=ON CARBOXY?/OBI (L) (GROUP?/OBI  
OR GP##/OBI)  
L37 175 SEA FILE=HCAPLUS ABB=ON PLU=ON L36 AND L16  
L38 38 SEA FILE=HCAPLUS ABB=ON PLU=ON L37 AND L20  
L39 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L38 AND L12  
L40 19 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 OR L35 OR L39

=> d .ca 140 1-19

L40 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:965151 HCAPLUS

DOCUMENT NUMBER: 138:35040

TITLE: Biocompatible, biodegradable, water-absorbent material  
prepared by polymer-polymer inter-coupling between a  
natural water-soluble polymer and a synthetic polymer

INVENTOR(S): Bucevschi, Mircea Dan; Colt, Monica

PATENT ASSIGNEE(S): Israel

SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002193516	A1	20021219	US 2001-823612	20010330
PRIORITY APPLN. INFO.:			US 2001-823612	20010330

AB A bio-compatible, biodegradable macromol. water-absorbent polymeric material, which has a three-dimensional configuration with intermol. covalent bonds and contains free functional groups selected from OH, SH, NH<sub>2</sub>, and COOH, is formed by polymer-polymer inter-coupling interaction between a natural water-sol. polymer A or its derivs. having a mol. wt. between 20,000 and 500,000 Da, and a synthetic polymer B at a ratio of A:B of 15:85-85:15 in a liq.-liq. heterogeneous system in the absence of any

crosslinking or coupling agent. The natural polymer A, which can undergo polymer-polymer intercoupling reactions, can be selected from: a non-ionic natural, partially denatured or chem. modified polymer that does not dissoc. in water; or an anionic natural, partially denatured or chem. modified polymer, that dissocs. in water to form anions; or a cationic natural, partially denatured or chem. modified polymer, that dissocs. in water to form cations; or an amphoteric natural, partially denatured or chem. modified polymer, that dissocs. in water to form both anions and cations; or mixts. thereof. Thus, 20 g gelatin in 980 g of water is prepd. with 50 g NH<sub>4</sub>OH (5%) added to give a pH of 8.5. A second 3862 g soln. contg. 80 g of poly(styrene-alt-maleic anhydride), 700 cm<sup>3</sup> of Et acetate, 3330 g OL1, and 300 cm<sup>3</sup> N,N'-dimethylformamide, 292 g OL2, is added to the reaction vessel. In dropping funnel are introduced 250 g of 5% NH<sub>4</sub>OH and an automated titroprocessor set to maintain the PH of the system at a const. value. The polymer-polymer intercoupling reaction in liq.-liq. heterogeneous system occurs in 150 min, and uses 180 g of 5% NH<sub>4</sub>OH soln. Such superabsorbent materials that are biocompatible and biodegradable are useful in different applications, such as for bodily hygiene, medical materials, agromaterials, drying agents, and others.

IC ICM C08H001-00

NCL 525054100

CC 6-3 (General Biochemistry)

Section cross-reference(s): 19, 35, 62, 63

IT 1398-61-4, Chitin 9000-01-5, Gum arabic 9000-07-1, Carrageenan 9000-11-7, Carboxymethylcellulose 9000-30-0, Guar gum 9000-40-2, Locust bean gum 9000-69-5, Pectin 9002-18-0, Agar **9004-34-6D**, Cellulose, oxidized 9004-54-0, Dextran, biological studies 9004-57-3, Ethylcellulose 9004-58-4, Ethylhydroxyethylcellulose 9004-61-9, Hyaluronic acid 9004-62-0, Hydroxyethylcellulose 9004-64-2, Hydroxypropylcellulose 9004-67-5, Methylcellulose 9005-25-8, Starch, biological studies 9005-27-0, Hydroxyethylstarch 9005-32-7, Alginic acid 9005-49-6, Heparin, biological studies 9005-82-7, Amylose 9007-28-7, Chondroitin sulfate 9012-76-4, Chitosan 9014-63-5, Xylan 9032-42-2, Hydroxyethylmethylcellulose 9041-56-9, Hydroxybutylmethylcellulose 9049-76-7, Hydroxypropylstarch 9057-02-7, Pullulan 9057-06-1, Carboxymethylstarch 11078-30-1, Galactomannan 11138-66-2, Xanthan 69992-87-6, Keratan 71010-52-1, Gellan gum 75634-40-1, Dermatan 152324-79-3, Heparosan

RL: BUU (Biological use, unclassified); **RCT (Reactant)**; BIOL(Biological study); **RACT (Reactant or reagent)**; USES (Uses)(biocompatible, **biodegradable**, water-absorbent material

prepd. by polymer-polymer inter-coupling between a natural water-sol. polymer and a synthetic polymer)

L40 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:522297 HCAPLUS

DOCUMENT NUMBER: 138:256747

TITLE: Oxidized cellulose esters: I. Preparation and characterization of oxidized cellulose acetates - a new class of biodegradable polymers

AUTHOR(S): Kumar, V.; Yang, D.

CORPORATE SOURCE: Division of Pharmaceutics, College of Pharmacy, The University of Iowa, Iowa City, IA, 52242, USA

SOURCE: Journal of Biomaterials Science, Polymer Edition (2002), 13(3), 273-286

CODEN: JBSEEA; ISSN: 0920-5063

PUBLISHER: VSP BV

DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Oxidized cellulose acetates (OCA), with a degree of substitution (DS) value ranging between 1.1 and 2.3 and a free carboxylic acid group content of 20% (wt./wt.), have been prepd. by reacting oxidized cellulose (OC, COOH content 20% wt./wt.) with a mixt. of acetic acid and acetic anhydride in the presence of sulfuric acid as a catalyst. The DS of OCA, in general, increased with increasing reaction temp., reaction time, and concn. of acetic anhydride in the reaction mixt. The yield of OCA, in contrast, increased with increasing concn. of acetic anhydride and decreased with increasing reaction time and temp. The intrinsic viscosity of OCA varied between 0.100 and 0.275, depending on the reaction conditions used during its prepn. In general, an increase in reaction temp. and the use of a prolonged reaction time decreased the intrinsic viscosity of OCA. No correlation was found between DS and intrinsic viscosity of OCA. The apparent pKa of OCA is 3.7-3.9. The new OCA polymers are practically insol. in water and slowly dissolve in pH 7.4 phosphate buffer soln. They are, however, sol. in a range of org. solvents (e.g. Et acetate, acetone, acetone/water, chloroform/methylene chloride, dimethylsulfoxide, DMF, and/or chloroform/methanol).

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

Section cross-reference(s): 63

IT 9032-53-5P, 6-Carboxycellulose

RL: RCT (Reactant); SPN (Synthetic preparation); THU

(Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT

(Reactant or reagent); USES (Uses)

(prepn. and characterization of **oxidized cellulose**

acetates as a new class of **biodegradable** polymers)

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:505441 HCAPLUS

DOCUMENT NUMBER: 137:68205

TITLE: Biodegradable **oxidized cellulose esters**

INVENTOR(S): Kumar, Vijay; Dong, Yang

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002086990	A1	20020704	US 2001-7866	20011206
WO 2002053599	A2	20020711	WO 2001-US50108	20011221
WO 2002053599	A3	20021121		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,

BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 PRIORITY APPLN. INFO.:

US 2000-259038P P 20001229

US 2001-7866 A 20011206

- AB Present invention relates to the prepn. of oxidized cellulose esters suitable for use as a drug carrier in the development of biodegradable controlled and/or sustained release pharmaceutical, agricultural, and veterinary compns., such as films, compacts, microspheres, and pellets. The esters are prepd. by **acylation** of oxidized cellulose having at least 3% carboxyl groups. The resulting oxidized cellulose esters are sol. in aq. alk. solns., H<sub>2</sub>O, and a variety of org. solvents.
- IC ICM C08B003-16
- NCL 536063000
- CC 63-6 (Pharmaceuticals)
- ST biodegradable **oxidized cellulose ester**
- IT Biodegradable materials  
 Drugs  
 Plastic films  
 Transparent films  
 Transparent materials  
 (biodegradable **oxidized cellulose esters**)
- IT Medical goods  
 (biodegradable; biodegradable **oxidized cellulose esters**)
- IT Glycols, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (ethers, solvent; biodegradable **oxidized cellulose esters**)
- IT Ethers, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (glycol, solvent; biodegradable **oxidized cellulose esters**)
- IT Biodegradable materials  
 (medical; biodegradable **oxidized cellulose esters**)
- IT Alcohols, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; biodegradable **oxidized cellulose esters**)
- IT 85-44-9, Phthalic anhydride 108-24-7, Acetic anhydride 108-30-5, Succinic anhydride, **reactions** 108-31-6, Maleic anhydride, **reactions** 645-66-9, Lauric anhydride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (biodegradable **oxidized cellulose esters**)
- IT 9004-35-7P, **Cellulose** acetate 9004-38-0P, **Cellulose** acetate phthalate 9004-44-8P, **Cellulose** phthalate 39306-92-8P, **Cellulose** laurate 57126-19-9P, **Cellulose** succinate 94555-32-5P, **Cellulose** maleate  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (oxidized; biodegradable **oxidized cellulose esters**)
- IT 9004-34-6, **Cellulose**, **reactions**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (oxidized; biodegradable **oxidized cellulose esters**)
- IT 67-68-5, DMSO, uses 68-12-2, DMF, uses 75-09-2, Methylene chloride, uses 127-19-5, DMA 872-50-4, n-Methyl-2-pyrrolidone, uses

RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; biodegradable **oxidized cellulose esters**)

L40 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:534473 HCAPLUS

DOCUMENT NUMBER: 135:129643

TITLE: Cellulose mixed **acylates**, manufacture of cellulose mixed **acylate** dope, cellulose mixed **acylate** films, and manufacture of the films

INVENTOR(S): Honda, Makoto; Shibue, Toshiaki

PATENT ASSIGNEE(S): Konica Co., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001200097	A2	20010724	JP 2000-9003	20000118
PRIORITY APPLN. INFO.:			JP 2000-9003	20000118

AB The cellulose mixed **acylates** bearing acetyl, propionyl, and/or butyryl groups as substituents have av. substitution degrees as follows:  $X2 + X3 + X6 + Y2 + Y3 + Y6 = 2.45-3.00$  and  $X6 + Y6 = 0.10-0.95$  ( $X2$ ,  $X3$ , and  $X6$  indicate av. degrees of Ac substitutions on OH groups at 2-, 3-, and 6-positions, resp.;  $Y2$ ,  $Y3$ , and  $Y6$  indicate av. degrees of propionyl and/or butyryl substitutions on OH groups at 2-, 3-, and 6-positions, resp.;  $X6 + Y6$  indicates av. degree of acyl (Ac, propionyl, and/or butyryl) substitutions on OH groups at 6-positions). The films are manufd. by casting of dope contg. the cellulose mixed **acylates** dissolved in solvents mainly contg.  $CH_2Cl_2$ , MeOAc, and/or fluoroalcs. The cellulose mixed **acylates** show high soly. and their films are useful for protection of polarizers for liq. crystal displays with wide view angle.

IC ICM C08L001-14  
 ICS B29C041-24; C08J005-18; G02B005-30; G02F001-1335; G03C001-795

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38

ST acetate propionate butyrate cellulose film LCD; cellulose mixed **acylate** liq crystal display

IT Liquid crystal displays  
 Plastic films  
 (cellulose mixed **acylates** with high soly. for forming films for LCD)

IT Alcohols, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (fluoro, solvents; cellulose mixed **acylates** with high soly. for forming films for LCD)

IT Alcohols, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (lower, solvents; cellulose mixed **acylates** with high soly. for forming films for LCD)

IT 9004-36-8P, Cellulose acetate butyrate 9004-39-1P, Cellulose acetate propionate



RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cellulose mixed **acylates** with high soly. for forming films for LCD)

IT 64-19-7, Acetic acid, **reactions** 106-31-0, Butyric anhydride 108-24-7, Acetic anhydride 123-62-6, Propionic anhydride

RL: **RCT (Reactant); RACT (Reactant or reagent)**  
(cellulose mixed **acylates** with high soly. for forming films for LCD)

IT 64-17-5, Ethanol, uses **75-09-2**, Methylene chloride, uses 79-20-9, Methyl acetate

RL: NUU (Other use, unclassified); USES (Uses)  
(**solvent**; cellulose mixed **acylates** with high soly. for forming films for LCD)

L40 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:562935 HCAPLUS

DOCUMENT NUMBER: 133:157763

TITLE: Cholesteric polymer liquid crystal compositions, cholesteric polymer liquid crystals, and their preparation

INVENTOR(S): Yukimasa, Hiroshi; Tanaka, Yasuyuki; Watanabe, Junji; Ise, Hiroshi

PATENT ASSIGNEE(S): Dainichi Seika Kogyo K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000226581	A2	20000815	JP 1999-26633	19990203
PRIORITY APPLN. INFO.:			JP 1999-26633	19990203

AB The compns. comprise cholesteric polymer liq. crystal-forming compds. mainly consisting of acyl derivs. of hydroxyalkyl cellulose and compds. with cures by irradiation of energy beam. The compns. are treated by coating, filling, or molding, treated by control of the wavelength of the reflective light, and then irradiated with energy beam to give cholesteric polymer liq. crystals having fixed their helical structure. The cholesteric polymer liq. crystals are also claimed. Ideal and clear color tones are obtained by the liq. crystals. The liq. crystals are useful in optical imaging devices and as colorants.

IC ICM C09K019-38  
ICS G02F001-13; G02F001-1333

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 75

IT 123-62-6, Propionic acid anhydride 920-46-7 9004-64-2, Hydroxypropylcellulose 26249-20-7, Butylene oxide  
RL: **RCT (Reactant); RACT (Reactant or reagent)**  
(cholesteric polymer liq. crystal compns. comprising of hydroxyalkyl cellulose acyl derivs. and photocurable polymers for)

L40 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:584811 HCAPLUS

DOCUMENT NUMBER: 131:201433  
 TITLE: Catalytic system for cellulose **acylation**,  
 process for producing catalytic system, and for its  
 practical application  
 INVENTOR(S): Grishin, Eduard Pavlovich; Bondar, Valentin  
 Ananievich; Mironov, Dmitry Petrovich; Shamolin,  
 Anatoly Ivanovich  
 PATENT ASSIGNEE(S): Nauchno-Proizvodstvennaya Firma "efiry Tselljulosy",  
 Russia  
 SOURCE: U.S., 9 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5952260	A	19990914	US 1996-654353	19960528
RU 2069215	C1	19961120	RU 1992-14662	19921225
RU 2101293	C1	19980110	RU 1992-14660	19921225
WO 9414344	A1	19940707	WO 1993-RU9400307	19931217
W: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
RW: JP, US				
US 6407224	B1	20020618	US 1999-356177	19990716

PRIORITY APPLN. INFO.:

RU 1992-14660	A	19921225
RU 1992-14662	A	19921225
WO 1993-RU307	W	19931217
US 1994-295662	A2	19940825
US 1996-654353	A3	19960528

AB The catalyst system includes an adduct of H<sub>2</sub>SO<sub>4</sub> with AcNMe<sub>2</sub> 1.0, a C<sub>2</sub>-4 fatty acid 14.0, and free H<sub>2</sub>SO<sub>4</sub> .ltoreq.14.0, or free AcNMe<sub>2</sub> .ltoreq.0.4 (mol ratio). The catalyst system also includes an adduct of HClO<sub>4</sub> with AcNMe<sub>2</sub> for use in cellulose reactions with propionic or butyric anhydride. Method for prepg. the catalyst system includes reacting hydrous H<sub>2</sub>SO<sub>4</sub> or H<sub>2</sub>SO<sub>4</sub> and HClO<sub>4</sub> with AcNMe<sub>2</sub> in the presence of a lower fatty acid anhydride in an amt. of 1 mol per mol of water contained in the reactants in the absence of cellulose at 0-25.degree..

IC ICM B01J003-02  
ICS B01J003-04

NCL 502167000

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)  
Section cross-reference(s): 67

ST sulfuric **acid** dimethylacetamide adduct **acylation**  
**catalyst**; propionic anhydride cellulose **acylation**  
**catalyst**; butyric anhydride cellulose **acylation**  
**catalyst**; acetate cellulose **acylation** **catalyst**

IT **Acylation**  
**Acylation** catalysts  
 (catalyst system contg. dimethylacetamide-H<sub>2</sub>SO<sub>4</sub> adduct for cellulose **acylation**)

IT Carboxylic **acids**, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (short-chain; **catalyst** system contg. dimethylacetamide-H<sub>2</sub>SO<sub>4</sub> adduct for cellulose **acylation**)

IT 64-19-7, Acetic **acid**, uses 79-09-4, Propionic **acid**,  
 uses 107-92-6, Butanoic **acid**, uses 127-19-5,  
 N,N-Dimethylacetamide 7601-90-3, Perchloric **acid**, uses

7664-93-9, Sulfuric acid, uses 241824-45-3  
241824-46-4

RL: CAT (Catalyst use); USES (Uses)

(catalyst system contg. dimethylacetamide-H<sub>2</sub>SO<sub>4</sub> adduct for cellulose acylation)

IT 9004-35-7P, Cellulose acetate 9004-48-2P, Cellulose propionate  
9015-12-7P, Cellulose butyrate

RL: IMF (Industrial manufacture); PREP (Preparation)

(catalyst system contg. dimethylacetamide-H<sub>2</sub>SO<sub>4</sub> adduct for cellulose acylation)

IT 106-31-0, Butyric anhydride 108-24-7, Acetic anhydride 123-62-6,  
Propionic anhydride 9004-34-6, Cellulose,  
reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(catalyst system contg. dimethylacetamide-H<sub>2</sub>SO<sub>4</sub> adduct for cellulose acylation)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:219958 HCAPLUS

DOCUMENT NUMBER: 130:257158

TITLE: Stabilized hair care products comprising an anionic  
detergent surfactant, a water-insol. silicone and an  
acrylic stabilizer

INVENTOR(S): Patel, Amrit; Aldrich, Tracey; Schweid, Bret

PATENT ASSIGNEE(S): Colgate-Palmolive Company, USA

SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9913837	A1	19990325	WO 1998-US19286	19980910
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
US 6165454	A	20001226	US 1997-933521	19970918
CA 2304085	AA	19990325	CA 1998-2304085	19980910
AU 9893169	A1	19990405	AU 1998-93169	19980910
AU 758881	B2	20030403		
EP 1014917	A1	20000705	EP 1998-946074	19980910
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI, RO			
BR 9812349	A	20000919	BR 1998-12349	19980910
NZ 503424	A	20020426	NZ 1998-503424	19980910
ZA 9808531	A	20000322	ZA 1998-8531	19980917
NO 2000001422	A	20000516	NO 2000-1422	20000317
MX 200002749	A	20001026	MX 2000-2749	20000317
PRIORITY APPLN. INFO.:			US 1997-933521 A	19970918
			WO 1998-US19286 W	19980910

AB A low energy method for making stabilized hair care products comprising an anionic deterative surfactant, a water-insol. silicone and an acrylic stabilizing agent is disclosed wherein the method does not require added heat. A hair prepn. contained 28% ammonium lauryl sulfate 50.00, cocodiethanolamine 2.00, Polyquaternium-10 0.15, monosodium phosphate 0.30, cationic guar gum 0.20, distearyldiammonium chloride 0.20, dimethicone 3.00, sodium cumene sulfonate 0.50, preservative, perfume, color, and water q.s. 100%.

IC ICM A61K007-06  
ICS A61K007-50

CC 62-3 (Essential Oils and Cosmetics)

IT 69-72-7, Salicylic acid, biological studies 79-09-4D, Propionic acid, cocoamido derivs. 107-36-8D, Isethionic acid, alkyl ethenoyl ether derivs. 107-64-2, Distearyl dimonium chloride 109-55-7D, C8-22-**acyl** derivs. 112-02-7, Cetyl trimethylammonium chloride 123-00-2D, 4-Morpholinepropanamine, C8-22-**acyl** derivs. 1310-73-2, Sodium hydroxide, biological studies 1643-20-5, Dodecyl dimethylamine oxide 2235-54-3, Ammonium lauryl sulfate 2571-88-2, Octadecyl dimethylamine oxide 2605-78-9, Octyl dimethylamine oxide 5138-18-1D, Sulfosuccinic acid, C8-18 dialkyl derivs. 7632-05-5, Sodium phosphate **7664-93-9D**, Sulfuric acid, alkyl ethenoyl ether derivs., biological studies 9000-30-0, Guar gum 9002-88-4 9003-01-4, Acrylic acid polymer 9004-34-6D, Cellulose, hydroxyalkyl cellulose, biological studies 9004-62-0, Hydroxyethyl cellulose 9004-82-4, Sodium laureth sulfosuccinate 9006-65-9, Dimethicone 11078-30-1, Galactomannan 13463-41-7, Zinc pyrithione 26062-79-3, Polyquaternium6 26256-79-1D, Sodium lauriminodipropionate, cocobetamido derivs. 26590-05-6, Polyquaternium 7 28348-53-0, Sodium cumene sulfonate 38083-17-9, Climbazole 50813-51-9, Acrysol ase 75 51365-71-0, Distearyl phthalic acid amide 56093-45-9, Selenium sulfide 73337-96-9 81859-24-7, Polyquaternium 10 82642-95-3, Carbopol 907 86880-59-3D, N-cocoyl derivs. 87977-44-4D, C8-18-alkyl esters 118058-39-2, Unilin 425 160307-10-8, Aculyn 33 163063-14-7, Aculyn 22 221627-88-9, Acusol 830

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(stabilized hair care products comprising anionic deterative surfactant, water-insol. silicone and acrylic stabilizer)

IT 9004-62-0D, Hydroxyethyl **cellulose**, quaternary ammonium salts  
RL: **RCT (Reactant); RACT (Reactant or reagent)**  
(stabilized hair care products comprising anionic deterative surfactant, water-insol. silicone and acrylic stabilizer)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:717943 HCAPLUS

DOCUMENT NUMBER: 127:360151

TITLE: Process for preparing cellulose acetoacetate alkanoates

INVENTOR(S): Kuo, Chung Ming; Edgar, Kevin Joseph

PATENT ASSIGNEE(S): Eastman Chemical Co., USA

SOURCE: PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9740074	A1	19971030	WO 1997-US6857	19970423
W: BR, CN, JP, SG				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5770726	A	19980623	US 1997-814944	19970310
EP 895514	A1	19990210	EP 1997-922423	19970423
EP 895514	B1	20000621		
R: BE, CH, DE, FR, GB, IT, LI				
CN 1223665	A	19990721	CN 1997-195798	19970423
BR 9708816	A	19990803	BR 1997-8816	19970423
JP 2000509090	T2	20000718	JP 1997-538329	19970423
PRIORITY APPLN. INFO.:			US 1996-16278P	P 19960424
			US 1997-814944	A 19970310
			WO 1997-US6857	W 19970423
AB	A process for prepg. a cellulose acetoacetate alkanoate without using a carboxamide/LiCl solvent system is disclosed. The process involves contacting cellulose in a carboxylic acid diluent with an <b>acylating</b> compd. selected from the group consisting of a carboxylic acid anhydride and an acid chloride, an acetoacetylating compd. selected from the group consisting of diketene, an alkyl acetoacetate and 2,2,6-trimethyl-4H-1,3-dioxin-4-one, and a mineral acid catalyst under conditions and in a molar ratio sufficient to cause the cellulose, <b>acylating</b> compd. and acetoacetylating compd. to react to produce a cellulose acetoacetate alkanoate. Thus, a cellulose ester was prepd. in this manner by using Natchez HVX as cellulose source, AcOH as diluent, Ac2O, diketene, H2SO4 and water as nonsolvent at reaction temp. of 60.degree..			
IC	ICM C08B003-16			
CC	43-3 (Cellulose, Lignin, Paper, and Other Wood Products)			
ST	<b>acylation</b> acetoacetylation cellulose reagent; diketene acetoacetylation agent cellulose deriv; acetic anhydride <b>acylation</b> cellulose; derivatization cellulose <b>acylation</b> acetoacetylation agent; carboxylic acid diluent <b>acylation</b> acetoacetylation cellulose			
IT	<b>Acids</b> , uses RL: CAT (Catalyst use); USES (Uses) (inorg., <b>acylation</b> /acetoacetylation <b>catalysts</b> ; process for prepg. cellulose acetoacetate alkanoates)			
IT	<b>Acylation</b> (process for prepg. cellulose acetoacetate alkanoates)			
IT	674-82-8, Diketene 1694-31-1D, esters 5394-63-8, 2,2,6-Trimethyl-4H-1,3-dioxin-4-one RL: <b>RCT (Reactant); RACT (Reactant or reagent)</b> (acetoacetylation agent; process for prepg. <b>cellulose</b> acetoacetate alkanoates)			
IT	106-31-0, Butyric anhydride 108-24-7, Acetic anhydride 123-62-6, Propionic anhydride 623-65-4, Palmitic anhydride 638-08-4, Stearic anhydride 645-66-9, Lauric anhydride 1680-36-0, Nonanoic anhydride 2051-49-2, Hexanoic anhydride 2082-77-1, Undecylic anhydride 24909-68-0, Linoleic anhydride 24909-72-6, Oleic anhydride RL: <b>RCT (Reactant); RACT (Reactant or reagent)</b> ( <b>acylation</b> agent; process for prepg. <b>cellulose</b> acetoacetate alkanoates)			
IT	75-75-2, Methanesulfonic acid 7601-90-3, Perchloric acid, uses 7664-93-9, Sulfuric acid, uses RL: CAT (Catalyst use); USES (Uses)			

(catalyst; process for prep. cellulose acetoacetate alkanates)

L40 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:568820 HCAPLUS

DOCUMENT NUMBER: 127:235911

TITLE: Surface-**acylated** (ligno)cellulose particles, their manufacture and uses as additives for polymeric materials

INVENTOR(S): Yoshikawa, Yuji; Nanba, Hiroaki

PATENT ASSIGNEE(S): Jujo Paper Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09221501	A2	19970826	JP 1996-49523	19960213
PRIORITY APPLN. INFO.:			JP 1996-49523	19960213
<p>AB The (ligno)cellulose particles having degree of <b>acylation</b> (D) on surface of 0.01-0.5, good hydrophobicity and resistance to mildew are manufd. by dispersing 100 parts (ligno)cellulose in 300-800 parts non-swellable solvents and <b>acylating</b> by 40-200 parts acid anhydrides and 50-500 parts aliph. carboxylic acids in the presence of 0.1-5 parts catalysts. The surface <b>acylated</b> (ligno)celluloses are useful as fillers, pigments or additives for plastics, rubbers, coatings, and adhesives. Thus, 100 g KC Flock W100 (powd. cellulose) in 500 mL MePh was mixed with 60 g Ac2O, 100 g AcOH, and 3 g H2SO4 in 100 g AcOH for 30 min, filtered, and dried at 105.degree. for 2 h to give acetylcellulose (I; D 0.049), 15 parts of which was combined with 30 parts natural rubber then the compn. was further mixed with other additives and vulcanized to give a test piece showing good dispersion of I.</p>				
<p>IC ICM C08B003-20 ICS C08B003-00; C08L001-00; C09D101-00; C09J101-00</p>				
<p>CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products) Section cross-reference(s): 38, 39, 42</p>				
<p>ST cellulose particle filler surface <b>acylation</b>; rubber additive <b>acylated</b> cellulose particle; pigment <b>acylated</b> cellulose particle; natural rubber acetylcellulose dispersibility; nonswelling solvent toluene cellulose acetylation</p>				
<p>IT Wood Wood (flour; surface <b>acylation</b> of lignocellulose for use in polymeric materials)</p>				
<p>IT <b>Acylation</b> Adhesives Coating materials Fillers Pigments, nonbiological (surface <b>acylation</b> of lignocellulose for use in polymeric materials)</p>				
<p>IT Epoxy resins, uses Natural rubber, uses Plastics, uses RL: POF (Polymer in formulation); USES (Uses)</p>				

- (surface **acylation** of lignocellulose for use in polymeric materials)
- IT 106-31-0, Butyric anhydride 108-24-7, Acetic anhydride 123-62-6, Propionic anhydride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acetylating agent; surface **acylation** of lignocellulose for use in polymeric materials)
- IT 7664-93-9, Sulfuric acid, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (**acylation catalysts**; surface **acylation** of lignocellulose for use in polymeric materials)
- IT 64-19-7, Acetic acid, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; surface **acylation** of lignocellulose for use in polymeric materials)
- IT 67-66-3, Chloroform, uses 75-09-2, uses 108-88-3, Toluene, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (**solvents**; surface **acylation** of lignocellulose for use in polymeric materials)
- IT 9004-34-6, KC Flock W100, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (surface **acylation** of lignocellulose)
- IT 9004-35-7P, Cellulose acetate 9004-36-8P, Cellulose, acetate butyrate  
 9004-39-1P, Cellulose, acetate propionate 9004-48-2P, Propionylcellulose  
 9015-12-7P, Cellulose, butyrate  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
 (surface **acylation** of lignocellulose for use in polymeric materials)
- IT 38294-69-8, Bisphenol a-epichlorohydrin-triethylenetetramine copolymer  
 RL: POF (Polymer in formulation); USES (Uses)  
 (surface **acylation** of lignocellulose for use in polymeric materials)
- IT 9004-34-6, Cellulose, reactions 11132-73-3, Lignocellulose  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (surface **acylation** of lignocellulose for use in polymeric materials)

L40 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:551376 HCAPLUS

DOCUMENT NUMBER: 125:198904

TITLE: Cellulose esters and their direct production

INVENTOR(S): Edgar, Kevin Joseph; Bogan, Richard Thomas

PATENT ASSIGNEE(S): Eastman Chemical Company, USA

SOURCE: PCT Int. Appl., 52 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9620960	A1	19960711	WO 1995-US16562	19951215
W: CA, JP, MX				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				

US 5750677	A	19980512	US 1994-367025	19941230
CA 2208662	AA	19960711	CA 1995-2208662	19951215
EP 800537	A1	19971015	EP 1995-943477	19951215
EP 800537	B1	20020502		

R: DE, FR, GB, NL, SE

JP 10511728	T2	19981110	JP 1995-521055	19951215
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US 5929229	A	19990727	US 1998-36646	19980306
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PRIORITY APPLN. INFO.:

US 1994-367025	A	19941230
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WO 1995-US16562	W	19951215
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OTHER SOURCE(S): MARPAT 125:198904

AB Cellulose esters having total degree of substitution (d.s.) per anhydroglucose unit 0.1-3.0 are obtained by contacting the following: (a) a cellulose material, (b) a solubilizing amt. of a solvent system comprising a carboxamide or a urea-based diluent, (c) an **acylating** reagent, and (d) a Ti-contg. compd. catalyst. A wide range of cellulosic materials and temps. may be employed and the degree of **acylation** may be controlled without the need to hydrolyze triesters down to the desired d.s. Mixed esters may also be obtained by this process. In an example, cellulose pulp was heated with 6 equiv acetic anhydride in AcNMe<sub>2</sub> contg. tetraiso-Pr titanate at 120.degree. to give cellulose acetate of d.s. 2.3 with good soly. in solvents.

IC ICM C08B003-00

ICS C08B003-06

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

ST cellulose esterification direct; titanium catalyst **acylation** cellulose

IT 57-10-3, Palmitic acid, **reactions** 57-11-4, Stearic acid, **reactions** 60-33-3, Linoleic acid, **reactions** 65-85-0, Benzoic acid, **reactions** 75-36-5, Acetyl chloride 79-03-8, Propionyl chloride 79-09-4, Propionic acid, **reactions** 106-31-0, Butyric anhydride 108-24-7, Acetic anhydride 112-16-3, Lauroyl chloride 112-76-5, Stearoyl chloride 112-80-1, Oleic acid, **reactions** 123-62-6, Propionic anhydride 141-75-3, Butyryl chloride 142-61-0, Hexanoyl chloride 143-07-7, Lauric acid, **reactions** 334-48-5, Capric acid 463-40-1, Linolenic acid 463-51-4, Ketene 623-65-4, Palmitic anhydride 638-08-4, Stearic anhydride 645-66-9, Lauric anhydride 674-82-8, Diketene 1680-36-0, Nonanoic anhydride 1694-31-1, tert-Butyl acetoacetate 2051-49-2, Hexanoic anhydride 5394-63-8, 2,2,6-Trimethyl-4H-1,3-dioxin-4-one 31290-91-2, Cyclohexanedicarboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)  
(acylating agent; direct prodn. of cellulose esters)

IT 9004-34-6, Cellulose, **reactions**

RL: RCT (Reactant); RACT (Reactant or reagent)  
(direct prodn. of cellulose esters)

IT 80-73-9 127-19-5, N,N-Dimethylacetamide 685-91-6, N,N-Diethylacetamide 758-96-3, N,N-Dimethylpropionamide 872-50-4, 1-Methyl-2-pyrrolidinone, uses

RL: NUU (Other use, unclassified); USES (Uses)  
(solvent; direct prodn. of cellulose esters)

L40 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:745284 HCAPLUS

DOCUMENT NUMBER: 123:202505

TITLE: Lewis acid catalysis of  
acetylation of cellulose

AUTHOR(S): Osmonkanova, G. N.; Sarybaeva, R. I.; Afanas'ev, V.



A.; Satyvaldiev, A. S.; Dzhamanbaev, Zh. A.  
 CORPORATE SOURCE: Inst. Org. Chem., Acad. Sci. Kyrgyziya Chui, Bishkek,  
 720071, Kyrgyzstan  
 SOURCE: Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B  
 (1995), 37(4), 679-82  
 CODEN: VSSBEE  
 PUBLISHER: MAIK Nauka  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB A high catalytic activity in esterification of cellulose was shown for  
 some Lewis acids of the general formula  $MtX_n$  (where  $Mt$  is a metal ion and  
 $X$  is halogen) and their mixts. with proton acids. Synergism was obsd.  
 when  $MtX_n$  and proton acids were used as co-catalysts. The different  
 catalytic activities of the acids were interpreted based on the elec.  
 cond. of the **acylating** mixts. The mechanism of the catalytic  
 acetylation of cellulose was proposed.  
 CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)  
 ST cellulose acetylation Lewis **acid catalyst**  
 IT Acetylation **catalysts**  
 (Lewis **acids**; for cellulose)  
 IT Lewis **acids**  
 RL: CAT (Catalyst use); USES (Uses)  
 (**catalysts**; for acetylation of cellulose)  
 IT 9004-34-6, Cellulose, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Lewis **acid catalysis** in acetylation of)  
 IT 9004-35-7P, Cellulose acetate  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (Lewis **acid catalysis** in prepn. of)  
 IT 109-63-7, Boron trifluoride etherate 7646-78-8, Tin tetrachloride, uses  
 7646-85-7, Zinc dichloride, uses 7647-18-9, Antimony  
 pentachloride 7727-15-3, Aluminum bromide  
 RL: CAT (Catalyst use); USES (Uses)  
 (Lewis **acid catalyst**; for acetylation of cellulose)  
 IT 7647-01-0, Hydrochloric **acid**, uses 7664-93-9, Sulfuric  
**acid**, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (**catalyst**; acetylation of cellulose in presence of Lewis  
**acids** and)  
 L40 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 1995:11398 HCAPLUS  
 DOCUMENT NUMBER: 122:12321  
 TITLE: Properties and following **reactions** of  
 homogeneously **oxidized celluloses**  
 AUTHOR(S): Heinze, Th.; Klemm, D.; Schnabelrauch, M.; Nehls, I.  
 CORPORATE SOURCE: Inst. fur Org. Chem., Makromol. Chem. der  
 Friedrich-Schiller-Universitat Jena, Humboldtstrasse,  
 D-0-Jena/10, Germany  
 SOURCE: Cellul.: Chem., Biochem. Mater. Aspects (1993),  
 349-54. Editor(s): Kennedy, John F.; Phillips, Glyn  
 O.; Williams, Peter A. Horwood: London, UK.  
 CODEN: 59RAA9  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 AB Na carboxycellulose (I) with a COOH group content of .ltoreq.0.8 can be  
 prepd. by oxidn. of cellulose with  $NaNO_2/H_3PO_4$  and subsequent treatment  
 with  $NaBH_4$ . The extent of oxidn. increases on increasing the mol. wt. of

the starting cellulose. There are no keto groups in the oxidized polymers. I shows a high tendency to form ionotropic gels. Activation and treatment of I with SO<sub>3</sub> or HSO<sub>3</sub>Cl leads to the corresponding sulfate esters with d.s. values .1toeq.0.45.

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

IT Gels

(ionotropic; properties and **reactions** of homogeneously oxidized celluloses)

IT **Carboxyl group**

Esterification

**Oxidation**

(properties and **reactions** of homogeneously oxidized celluloses)

IT 9069-12-9, 6-Carboxycellulose, sodium salt

RL: PRP (Properties); **RCT (Reactant); RACT (Reactant or reagent)**

(properties and **reactions** of homogeneously oxidized celluloses)

IT 7632-00-0, Sodium nitrite (NaNO<sub>2</sub>) **7664-38-2, Phosphoric acid, reactions 9004-34-6, Cellulose, reactions**

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(properties and **reactions** of homogeneously oxidized celluloses)

L40 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1992:131017 HCAPLUS

DOCUMENT NUMBER: 116:131017

TITLE: Effect of the preparation conditions of viscose on the solubility of DA-xanthates

AUTHOR(S): Lang, H.; Lukanoff, B.

CORPORATE SOURCE: Inst. Polym. Chem. "Erih Korrens", Germany

SOURCE: Koksnes Kimija (1991), (4), 34-6

CODEN: KHDRDQ; ISSN: 0201-7474

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The characteristics of viscose solns. from beechwood sulfite pulp were studied. Xanthates were prepd. from viscose via dry, wet, and semidry xanthation. In order to stabilize xanthates, they were modified with diethylchloroacetamide (DA). Rayon from xanthates prepd. via semidry xanthation exhibited the best physicomach. properties due to high substitution degree and soly. of the xanthates.

CC 40-2 (Textiles and Fibers)

Section cross-reference(s): 43

IT **Acylation**

(xanthation, of viscose, effect on properties of xanthates on method of)

IT **67-68-5, DMSO, properties 7732-18-5, Water, uses**

RL: USES (Uses)

(**solvents** contg., **soly.** of diethylchloroacetamide-modified cellulose xanthates in, prepn. conditions effect on)

IT 2315-36-8D, **reaction** products with **cellulose** xanthate

9032-37-5D, **Cellulose** xanthate, **reaction** products with diethylchloroacetamide

RL: PRP (Properties)

(soly. of, effect of viscose prepn. conditions on)

L40 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1991:473895 HCAPLUS  
 DOCUMENT NUMBER: 115:73895  
 TITLE: Preparation of cation exchangers from apple residues.  
 I. Treatments and characterization  
 AUTHOR(S): Maranon, Elena; Contreras, Alfonso; Sastre, Herminio  
 CORPORATE SOURCE: Dep. Ing. Quim., Univ. Oviedo, Oviedo, Spain  
 SOURCE: Afinidad (1991), 48(433), 180-2  
 CODEN: AFINAE; ISSN: 0001-9704  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Spanish  
 AB Residues of apple juice extrn., contg. pectin, cellulose, hemicelluloses, lignin, reducing sugars, etc., were treated by sequential oxidn., oxidative crosslinking, carboxymethylation, xanthation, and phosphorylation, to obtain a material with cation exchange properties. The material has porosity, d., moisture content, and swelling characteristics that facilitate ion transport and high chem. and structural stability, compared to those of the nontreated juice press waste.  
 CC 44-7 (Industrial Carbohydrates)  
 Section cross-reference(s): 17, 24, 38  
 IT **Acylation**  
 (xanthation, of apple juice residues contg. celluloses and pectin, with epichlorohydrin and carbon disulfide, for cation exchanger manuf.)  
 IT 50-00-0, Formaldehyde, **reactions**  
 RL: **RCT (Reactant); RACT (Reactant or reagent)**  
 (oxidative crosslinking with, of apple juice residues contg. celluloses and pectin, for cation exchanger manuf.)  
 L40 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 1990:461523 HCAPLUS  
 DOCUMENT NUMBER: 113:61523  
 TITLE: Spherical ionotropic gels of cellulose derivatives containing **carboxy groups** as carriers for biocatalysts. IV. Synthesis of **carboxycellulose** and ionotropic gelation with calcium ions  
 AUTHOR(S): Heinze, Thomas; Klemm, Dieter; Loth, Fritz; Nehls, Irene  
 CORPORATE SOURCE: Sekt. Chem., Friedrich-Schiller-Univ., Jena, DDR-6900, Ger. Dem. Rep.  
 SOURCE: Angewandte Makromolekulare Chemie (1990), 178, 95-107  
 CODEN: ANMCBO; ISSN: 0003-3146  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 AB Na carboxycellulose with degree of substitution <0.8% was prepd. by oxidn. of cellulose with NaNO<sub>2</sub>/H<sub>3</sub>PO<sub>4</sub> and subsequent treatment with NaBH<sub>4</sub>. No carbonyl group could be detected until after treatment with NaBH<sub>4</sub>. IR and NMR studies showed that only the C-6 atom of the anhydroglucose unit was oxidized. Na carboxycellulose exhibited a high tendency to form spherical ionotropic gels in spherical shape with Ca ions. Gel formation was apparent with addn. of 0.5 mol Ca/mol CO<sub>2</sub>, and 80% gel formation was attained at 4 mol Ca/mol CO<sub>2</sub>. The mech. stable gels were characterized by swelling behavior and SEM and could be used as nontoxic supports.  
 CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)  
 IT 7632-00-0, Sodium nitrite **7664-38-2**, Phosphoric acid, uses and miscellaneous 16940-66-2  
 RL: PROC (Process)  
 (oxidn. of cellulose in presence of)

IT 9004-34-6, Cellulose, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidn. of, in presence of sodium nitrite and phosphoric acid)

L40 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1984:87477 HCAPLUS

DOCUMENT NUMBER: 100:87477

TITLE: Modification of cellulose nitrates by carboxylic acid chlorides in the presence of Lewis acids

AUTHOR(S): Shchelokhova, L. S.; Sarybaeva, R. I.

CORPORATE SOURCE: Inst. Org. Khim., Frunze, USSR

SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1983), 56(11), 2560-4  
CODEN: ZPKHAB; ISSN: 0044-4618

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The **acylation** of cellulose nitrate (I) [9004-70-0] with  $\text{RCOCl}$  (R = aliph., arom.) at 20-70.degree. in org. solvents was catalyzed by Lewis acids. The content of residual N in the mixed esters was an exponential function of catalyst concn. The activity of the Lewis acid catalyst decreased in the order:  $\text{SnCl}_4 > \text{SbCl}_5 > \text{AlCl}_3 > \text{TiCl}_4 > \text{ZnCl}_2 > \text{BF}_3 \cdot \text{OEt}_2$ . The transesterification of I caused no inversion of configuration in the secondary C atoms. The mixed esters were useful as fire-resistant compns.

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

ST **acylation catalyst** cellulose nitrate; Lewis acid catalyst **acylation** ester; fire resistance cellulose ester

IT Lewis acids

RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for **acylation** of cellulose nitrate)

IT 75-36-5 79-03-8 98-88-4 100-07-2 103-80-0 108-12-3 112-76-5  
122-04-3 638-29-9 2528-61-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(**acylation** by, of cellulose nitrate in presence of Lewis acids)

IT 7446-70-0, uses and miscellaneous 7550-45-0, uses and miscellaneous  
7637-07-2, uses and miscellaneous 7646-78-8, uses and miscellaneous  
7646-85-7, uses and miscellaneous 7647-18-9

RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for **acylation** of cellulose nitrate)

L40 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1980:78384 HCAPLUS

DOCUMENT NUMBER: 92:78384

TITLE: Preparation of higher aliphatic acid esters of wood in a dinitrogen tetroxide-DMF cellulose solvent medium

AUTHOR(S): Shiraishi, Nobuo; Matsunaga, Tadayo; Yokota, Tokuo; Hayashi, Yoshiyuki

CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan

SOURCE: Journal of Applied Polymer Science (1979), 24(12), 2347-59

CODEN: JAPNAB; ISSN: 0021-8995

DOCUMENT TYPE: Journal

LANGUAGE: English

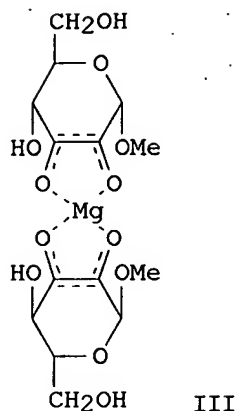
AB In the **acylation** of wood meal (*Betula maximowicziana*) with aliph. acid anhydrides and chlorides, the use of  $\text{N}_2\text{O}_4$ -DMF

[68-12-2]-pyridine as a reaction medium resulted in decrystn. of wood, enabling uniform substitution of cellulose [9004-34-6] with acyl groups. Acid chlorides (caproyl chloride [142-61-0], stearoyl chloride [112-76-5], etc.) were more effective **acylation** agents than anhydrides (caproic anhydride [2051-49-2], butyric anhydride [106-31-0]); although no difference in reactivity was obsd. among acid chlorides, the reactivity of anhydrides decreased with increasing chain length.

- CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)  
Section cross-reference(s): 22
- ST solvent esterification cellulose birchwood; dinitrogen tetroxide cellulose esterification; DMF cellulose esterification birchwood; acid chloride **acylation** birchwood; anhydride **acylation** birchwood
- IT **Acylation**  
(of birchwood, in DMF-nitrogen tetroxide solns.)
- IT Wood  
(birch, **acylation** of, in DMF-nitrogen tetroxide solns.)
- IT **9004-34-6, reactions**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**acylation** of, in birchwood in presence of dinitrogen tetroxide-DMF)
- IT 97-72-3 106-31-0 111-64-8 112-13-0 112-16-3 112-67-4 112-76-5  
142-61-0 2051-49-2 2082-59-9  
RL: USES (Uses)  
(**acylation** with, of cellulose in birchwood)
- IT **68-12-2, uses and miscellaneous**  
RL: USES (Uses)  
(**solvents**, contg. dinitrogen tetroxide, for esterification of cellulose in birchwood)

L40 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1977:190404 HCAPLUS  
DOCUMENT NUMBER: 86:190404  
TITLE: Stabilization of hexulosides and of oxycellulose in alkaline medium by interaction with metallic cations  
AUTHOR(S): Defaye, Jacques; Driguez, Hugues; Gadelle, Andree  
CORPORATE SOURCE: Cent. Rech. Macromol. Veg., Grenoble, Fr.  
SOURCE: Applied Polymer Symposia (1976), 28(Proc. Cellul. Conf., 8th, 1975, Vol. 3), 955-69  
CODEN: APPSBX; ISSN: 0570-4898  
DOCUMENT TYPE: Journal  
LANGUAGE: French  
GI



AB In aq. alk. media contg. Mg salts both Me .alpha.-D-arabino-hexopyranosid-2-ulose (I) and Me .alpha.-D-ribo-hexopyranosid-3-ulose (II) form the chelate III. The 3-O-Me ether of I did not form a complex. In the absence of Mg++, I and II in alk. media underwent decompn. as did oxycellulose. Ba++ and Ca++ also interacted with I and II, but gave only very weak protection of oxycellulose (IV) against depolymerization. In excess base, II showed no modification based on NMR nor was the viscosity of the subsequently reduced IV modified. Thus, chelation by Mg++ of an hexulopyranoside moiety may be involved in the stabilization of cellulose by Mg++ in the alk. oxidative pulping process.

CC 33-8 (Carbohydrates)

Section cross-reference(s): 43

IT 2466-76-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(acylation by, of methyl benzylideneglucopyranoside)

IT 9004-34-6D, oxidized

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with magnesium ion in alkaline media)

L40 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1975:549349 HCAPLUS

DOCUMENT NUMBER: 83:149349

TITLE: Kinetics and mechanism of cellulose **acylation**

AUTHOR(S): Pyatakina, N. K.; Moiseev, Yu. V.; Zaikov, G. E.

CORPORATE SOURCE: Vses. Nauchno-Issled. Inst. Sint. Smol, Vladimir, USSR

SOURCE: Vysokomolekulyarnye Soedineniya, Seriya A (1975), 17(7), 1493-6

CODEN: VYSAAF; ISSN: 0507-5475

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The **acylation** of cotton cellulose (I) (d.p. 2800) with a mixt. of Ac2O and AcOH in various ratios and in the presence of 0.005-0.02 mole/l HClO4 [7601-90-3] was a 1st order reaction, adequately described by the Arrhenius equation. The activation energy of **acylation** of I (in a mixt. of 20% Ac2O and 80% AcOH) was 17.0 +/- 1 kcal/mole. An ionic **acylation** mechanism (via **acylium** ions) of I was proposed.

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

ST cellulose **acylation** kinetics; mechanism **acylation** cellulose

- IT 64-19-7, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acetylation with acetic anhydride and, of cellulose,  
kinetics of)
- IT 7601-90-3, uses and miscellaneous  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, in acetylation of cotton cellulose, kinetics in relation  
to)

=> fil wpids

FILE 'WPIDS' ENTERED AT 13:14:20 ON 23 JUN 2003

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FILE LAST UPDATED: 19 JUN 2003 <20030619/UP>  
MOST RECENT DERWENT UPDATE: 200339 <200339/DW>  
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=> d his

(FILE 'WPIDS' ENTERED AT 13:02:49 ON 23 JUN 2003)

DEL HIS Y

L1 87421 S CELLULOSE#  
L2 307 S L1 (S) ACYLAT?  
L3 4 S L2 (S) OXIDI?  
L4 5 S L2 (S) OXIDA?  
L5 8 S L3 OR L4  
L6 9251 S L1 (S) ESTER#  
L7 116 S L6 AND ACYLAT?  
L8 145539 S CARBOXYLIC OR CARBOXYL  
L9 32 S L7 AND L8  
L10 27691 S ORGANIC ACID#  
L11 34512 S DMSO OR DMF OR DMA OR DIOXANE OR METHYLENE CHLORIDE#  
L12 5 S L11 AND L7  
L13 10 S ACID ANHYDRID? AND L7  
L14 14897 S ACID CATALYS?  
L15 40628 S (SULFURIC OR SULPHURIC) (W) ACID# OR PHOPHORIC ACID OR PERCHL  
L16 70372 S L15 OR PHOSPHORIC ACID  
L17 3 S L7 AND L16  
L18 23 S L3 OR L4 OR L5 OR L12 OR L13 OR L17  
L19 748 S L1 (S) BIODEGRAD?  
L20 20 S L19 (S) OXIDI?  
L21 4 S L20 (S) ESTER?  
L22 26 S L18 OR L21

FILE 'WPIDS' ENTERED AT 13:14:20 ON 23 JUN 2003

=> d que 122

L1 87421 SEA FILE=WPIDS ABB=ON PLU=ON CELLULOSE#  
L2 307 SEA FILE=WPIDS ABB=ON PLU=ON L1 (S) ACYLAT?  
L3 4 SEA FILE=WPIDS ABB=ON PLU=ON L2 (S) OXIDI?  
L4 5 SEA FILE=WPIDS ABB=ON PLU=ON L2 (S) OXIDA?  
L5 8 SEA FILE=WPIDS ABB=ON PLU=ON L3 OR L4  
L6 9251 SEA FILE=WPIDS ABB=ON PLU=ON L1 (S) ESTER#



L7 116 SEA FILE=WPIDS ABB=ON PLU=ON L6 AND ACYLAT?  
L11 34512 SEA FILE=WPIDS ABB=ON PLU=ON DMSO OR DMF OR DMA OR DIOXANE  
OR METHYLENE CHLORIDE#  
L12 5 SEA FILE=WPIDS ABB=ON PLU=ON L11 AND L7  
L13 10 SEA FILE=WPIDS ABB=ON PLU=ON ACID ANHYDRID? AND L7  
L15 40628 SEA FILE=WPIDS ABB=ON PLU=ON (SULFURIC OR SULPHURIC) (W)  
ACID# OR PHOPHORIC ACID OR PERCHLORIC ACID OR ZINC CHLORIDE OR  
ZNCL  
L16 70372 SEA FILE=WPIDS ABB=ON PLU=ON L15 OR PHOSPHORIC ACID  
L17 3 SEA FILE=WPIDS ABB=ON PLU=ON L7 AND L16  
L18 23 SEA FILE=WPIDS ABB=ON PLU=ON L3 OR L4 OR L5 OR L12 OR L13 OR  
L17  
L19 748 SEA FILE=WPIDS ABB=ON PLU=ON L1 (S) BIODEGRAD?  
L20 20 SEA FILE=WPIDS ABB=ON PLU=ON L19 (S) OXIDI?  
L21 4 SEA FILE=WPIDS ABB=ON PLU=ON L20 (S) ESTER?  
L22 26 SEA FILE=WPIDS ABB=ON PLU=ON L18 OR L21

=> d .wp 1-26 122

L22 ANSWER 1 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
AN 2003-381417 [36] WPIDS  
DNC C2003-101175  
TI Drug formulation useful for gastrointestinal deposition comprises several  
non-compressed free flowing particles comprising a core coated with a  
functional coating and containing a drug with a specified mean diameter  
and an excipient.  
DC A96 B07  
IN SIMPSON, D B B; STANIFORTH, J; TOBYN, M  
PA (VECT-N) VECTURA LTD  
CYC 100  
PI WO 2003020241 A2 WO 20030313 (200336)\* EN 107p  
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU  
MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT  
RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM  
ZW  
ADT WO 2003020241 A2 WO 2002-IB4101 20020905  
PRAI US 2001-317522P 20010905  
AB WO2003020241 A UPAB: 20030609  
NOVELTY - A drug formulation (F1) comprises several non-compressed free  
flowing particles comprising a core and containing a drug (D1) (preferably  
chlorpheniramine or its salt) and an excipient. The core is coated with a  
functional coating. At least 40 % of the drug particles have a mean  
diameter of greater than 10 micro m to 1 mm (preferably 50 micro m).  
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the  
following:  
(1) a drug delivery system comprising a dosing device containing a  
housing and an actuator. The device contains at least one unit dose of  
(F1). The device delivers a unit dose of (F1) in such a manner that the  
dose does not reach the lower lung of a human patient;  
(2) a drug delivery system comprising a multiple unit dosing device  
comprising a housing and an actuator. The device contains either multiple  
unit doses of (F1) or at least one unit dose of (F1). For the at least one  
unit dose of (F1), the drug particles have a diameter of greater than 10  
mu m - 1 mm. The device delivers the two respective doses of (F1) in such  
a manner that the doses do not reach the lower lung of a human patient;  
(3) a method of administering a drug to a human patient for

gastrointestinal deposition involving formulating (F1), containing (F1) in a drug delivery device, which delivers multiple unit doses of the multi-particulates of the drug into the oral cavity and administering a unit dose of the multi-particulates to the oral cavity, where greater than 80 % of the unit dose is deposited in the gastrointestinal tract;

(4) preparing a drug delivery system for delivering multiple doses of a drug for gastrointestinal deposition involving preparing (F1) and placing multiple unit doses of (F1) in a device which meters unit dose for delivery;

(5) preparing (m1) a multi-particulate drug formulation for gastrointestinal deposition involving (a) preparing several non-compressed free flowing particles comprising a core containing (D1) and the excipient, and (b) over coating the core with a coating which minimizes water coalescence on the surface of the drug particles and static charge between the particles;

(6) preparing (m2) a multi-particulate drug formulation for gastrointestinal deposition involving step (a), air jet sieving the particles to separate the cores from fine particles, and over coating the core with a functional coating;

(7) preparing (m3) a multi-particulate drug formulation with improved weight uniformity for gastrointestinal deposition involving step (a) and over coating the core with a functional coating;

(8) preparing (m4) a multi-particulate drug formulation for gastrointestinal deposition with minimal change in cohesiveness in response to humidity change involving step (a) and overcoating the core with a functional coating such that the cohesiveness of the particles does not change over a humidity gradient of 10 - 90 (20 - 80, especially 40 - 60) % relative humidity;

(9) a controlled release formulation (A1) comprising a drug (D2) and a lacquer agent to provide a controlled release of (D2).

ACTIVITY - None given

MECHANISM OF ACTION - None given.

USE - For gastrointestinal deposition (claimed).

ADVANTAGE - The excipient and the functional coat provide a controlled release of (D1) upon gastrointestinal deposition to provide a therapeutic effect for at least 12 (preferably 24) hours after oral administration; and a delayed release of (D1) upon gastrointestinal deposition to effect intestinal absorption. The excipient and the functional coat provide tastemasking. The functional coating minimizes asperities on the surface of the drug particles, is resistant to chip coating and provides pliability to the drug particles. Thus the resulting formulations are high load multiparticulate formulations with minimal use of excipient, have improved weight variability, from dose to dose and batch to batch, have minimal change in cohesiveness in response to humidity change, have minimal potential for water coalescence on the surface of the drug particles, have minimal static charge between the particles, increased flowability and decreased bridging, and provide a controlled or delayed release of the drug particles. The formulations have a desired particle range in order to minimize pulmonary aspiration of the particles and to improve the functionality of the formulations in the multiple unit dosing devices, which deliver a unit dose of the formulations for oral administration or delivery upon actuation. The formulations show improved performance and aid patient compliance. The formulations facilitate delivery of a wide range of therapeutic agents and minimize pulmonary deposition of materials having undesirable or unknown pulmonary toxicology but which are approved for oral delivery.

Dwg.3/13

TECH

UPTX: 20030609

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Formulation: In (F1), the core comprises (D1) coated with the excipient, which in turn is

over-coated with the functional coat. (D1) is interdispersed in the excipient, which is wet or melt granulated. Particularly (D1) and the first portion of the excipient are wet granulated and the resultant wet granulated particles are melt granulated with a second portion of the excipient. The first and the second portion of the excipient are made from same or different materials. The functional coated particles are melt granulated with the excipient. Difference between film forming temperature of the melt granulating excipient and the film forming temperature of the functional coat is more than 15 (preferably more than 20, especially more than 25) degrees C. In (A1), the lacquer agent is at least partially inter-dispersed with (D2) or the lacquer agent is coated onto (D2). (A1) is in multi-particulate form or is a tablet. The excipient and the functional coat comprise a salivary stimulant. Greater than 90 (preferably 95, especially 99) % of the particles of (D1) have a diameter of greater than 10 (preferably greater than 50) micro m.

Preferred Method: In (m2), the fine particles are less than 50 (preferably less than 25, especially less than 10) micro m. In (m1) - (m4), the particles of (D1) have a mean diameter of greater than 10 micro m - 1 mm (preferably 50 - 500 micro m) and comprise at least 50, 60, 70 or at least 80 % of (D1). The method (m2) additionally involves filtering the particles prior to air jet sieving to remove particles greater than 500 (preferably 750) micro m or greater than 1 mm and placing several multi-particles in a dosing device capable of metering a unit dose of the formulation for oral delivery. The methods (m1) - (m4) involve preparing the particles with a coloring agent, which minimizes weakening of the adhesion of the overcoat to the core.

TECHNOLOGY FOCUS - POLYMERS - Preferred Components: The excipient and the functional coat comprise a tastemasking material, moisture barrier, a texture modifier and a delayed release material. The functional coat comprises a chip resistant coating and a pliable coating. The melt granulating excipient is beeswax, white wax, emulsifying wax, an ester of wax acid, carnauba wax and/or polyethylene glycol. The controlled release excipient is a hydrophobic or cellulosic material. The hydrophobic material is an acrylic polymer, a cellulosic material, shellac and/or zein (preferably acrylic polymer). The acrylic polymer is acrylic acid and methacrylic acid copolymer, methyl methacrylic copolymer, ethoxyethyl methacrylate, cyanoethyl methacrylate, aminoalkyl methacrylate copolymer, poly(acrylic acid), poly(methacrylic acid, methacrylic acid alkylamide copolymer, poly(methyl methacrylate), poly(methacrylic acid) (anhydride), methyl methacrylate, polymethacrylate, methyl methacrylate copolymer), polyacrylamide, poly(methacrylic acid anhydride) and/or glycidyl methacrylate copolymer. The cellulosic material is a cellulose ester, cellulose diester, cellulose triester, cellulose ether, cellulose-ester-ether, cellulose acylate, cellulose diacylate, cellulose triacylate, cellulose acetate, cellulose diacetate, cellulose triacetate, cellulose acetate propionate and/or cellulose acetate butyrate. The delayed release material is an enteric polymer selected from methacrylic acid polymer, cellulose acetate phthalate, hydroxypropyl methylcellulose phthalate, hydroxypropyl methylcellulose acetate succinate, polyvinyl acetate phthalate, cellulose acetate trimellitate and/or carboxymethylethylcellulose. The moisture barrier material and the texture modifier are selected from acacia gum, acrylic acid polymer and copolymer (including polyacrylamide, polyacryldextran, polyalkyl cyanoacrylate or polymethyl methacrylate), agar-agar, agarose, albumin, alginic acid and alginate, carboxyvinyl polymer, cellulose derivative (such as cellulose acetate), polyamide (including nylon 6-10, poly(adipyl-L-lysine,

polyterephthalamide or poly-(terephthaloyl-L-lysine)), poly-epsilon-caprolactam, polydimethylsiloxane, polyester, poly(ethylene-vinyl acetate), polyglycolic acid, polylactic acid and its copolymer, polyglutamic acid, polylysine, polystyrene, shellac, xanthan gum, anionic polymer of methacrylic acid and methacrylic acid ester and/or hydroxyalkylcellulose. The hydroxyalkylcellulose for moisture barrier material is hydroxypropylmethylcellulose. The chip resistant coating comprises a material selected from acacia gum, alginic acid and alginate, carboxymethylcellulose, ethylcellulose, gelatine, hydroxypropylcellulose, hydroxypropylmethylcellulose, methylcellulose, xanthan gum, pectin, tragacanth, microcrystalline cellulose, hydroxyethylcellulose, ethylhydroxyethylcellulose, sodium carboxymethylcellulose, polyethylene glycol, polyvinylpyrrolidone, polyvinyl alcohol, polyacrylic acid, gum arabic, vinylpyrrolidone-vinyl acetate copolymer, methylhydroxyethylcellulose, agar-agar, carrageenan, karaya gum, starch hydrolysate and/or chitosan. (A1) additionally comprises a channeling agent selected from polyvinylpyrrolidone and/or polyethyleneglycol. The overcoat in (m1) - (m4) comprises a plasticizer, while the overcoat in (m2) comprises a conductive polymer. The particulates have a mean rugosity of 1 - 15.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The melt granulating excipient is hydrogenated vegetable oil, cetyl alcohol, stearyl alcohol, stearic acid, propylene glycol monostearate, glyceryl monostearate, glyceryl palmitostearate and/or glyceryl behenate. The taste masking material is selected from water-soluble sweetening agents, water-soluble artificial sweeteners and/or dipeptide based sweeteners. The water-soluble sweetening agent is monosaccharide, disaccharide or polysaccharide (selected from xylose, ribose, glucose, mannose, galactose, fructose, dextrose, sucrose, maltose, partially hydrolyzed starch or corn syrup solid and sugar alcohol). The sugar alcohol is sorbitol, xylitol and/or mannitol. The water-soluble artificial sweetener is soluble saccharin salt (selected from sodium or calcium saccharin salt), cyclamate salt, acesulfam-K, and/or free acid form of saccharin. The dipeptide based sweetener is L-aspartyl L-phenylalanine methyl ester. The salivary stimulant is citric acid, tartaric acid, malic acid, fumaric acid, adipic acid or succinic acid, its acid anhydride and/or acid salt. The chip resistant coating comprises a material selected from lactose, starch (wheat, maize, potato or rice starch), sucrose, glucose, mannitol, sorbitol, xylitol, stearic acid, hydrogenated cottonseed oil, hydrogenated castor oil and/or fructose. The pliable coating comprises a plasticizer selected from dibutyl sebacate, diethyl phthalate, triethyl citrate, tributyl citrate and/or triacetin. (A1) additionally comprises a channeling agent selected from dextrose, sucrose, mannitol, xylitol and/or lactose. The lacquer agent is selected from corn oil, cottonseed oil, menhaden oil, pine oil, peanut oil, safflower oil, sesame oil, soybean oil, and/or linseed oil; fatty acid of 8-20C oil (preferably optionally saturated glyceride); branched or polycarboxylated oil (selected from linoleic acid, linolenic acid and/or oleic acid); caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, margaric acid, stearic acid, arachidic acid, behenic acid and/or lignoceric acid. In (m1) - (m4), the coloring agent optionally comprises an opacifier and/or a lake.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Components: (A1) additionally comprises a dispersing agent selected from colloidal silicone dioxide, talc, kaolin, silicone dioxide, colloidal calcium carbonate, bentonite, Fuller's earth and/or magnesium aluminum silicate.

L22 ANSWER 2 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
AN 2003-093292 [08] WPIDS  
DNC C2003-023535

TI New process for the production of 1,2-diacylated glycerophospholipids and their analogues, comprises using phospholipase enzyme to catalyze reaction between glycerophospholipid and carboxylic acid acyl donor in a microaqueous environment.

DC B07 D13 D16 D21 E11

IN BASHEER, S; MAR-CHAIM, N; SHULMAN, A; ZUABI, R

PA (ENZY-N) ENZYMOTEC LTD

CYC 100

PI WO 2002090560 A2 20021114 (200308)\* EN 50p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT  
RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM  
ZW

ADT WO 2002090560 A2 WO 2002-IL344 20020502

PRAI IL 2001-142952 20010503

AB WO 200290560 A UPAB: 20030204

NOVELTY - New process for the production of 1,2-diacylated-glycerophospholipids (A1) and their synthetic or natural analogues comprises contacting a glycerophospholipid (i) with a carboxylic acid acyl donor (ii) in a microaqueous environment in the presence of a phospholipase enzyme catalyzing an esterification/transesterification/acylation at sn-1 and sn-2 positions of (i).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a process for the production of 1-acylated-2-lyso-glycerophospholipids (A2) and their synthetic or natural analogues comprising contacting (i) with (ii) in a microaqueous environment in the presence of an enzyme capable of catalyzing an acylation at the sn-1 position of (i), in the presence of an organic solvent.

USE - For preparation of 1,2-diacylated-glycerophospholipids (claimed).

ADVANTAGE - The conversion yield of the glycerophospholipid to 1,2-diacyl-glycerophospholipid is at least 20%. The method is a one-step process providing economical benefits. The 1,2-diacyl-glycerophospholipids are obtainable in high purity and carry identical desired fatty acyl groups at sn-1 and sn-2 positions. Immobilization of the enzyme facilitates the activity.

Dwg.0/3

TECH UPTX: 20030204

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: (i) is selected from glycerophosphoryl choline (GPC) or its derivatives, where the choline moiety is replaced by ethanolamine, serine or an alcohol (preferably inositol or glycerol).

(ii) is a fatty acid acyl donor, which is optionally saturated, short-, medium- or long-chained linear or branched fatty acid derivative (preferably free fatty acid, fatty acid chloride, fatty acid alkyl ester, fatty acid vinyl ester or fatty acid anhydride).

The phospholipase enzyme is optionally immobilized on an insoluble matrix and is optionally surfactant-coated.

The 1- and 2-acyl groups of (A1) are identical and predetermined.

The optionally surfactant-coated phospholipase is physically, ionically or covalently bound to the insoluble matrix.

The insoluble matrix is an adsorbent or an activated insoluble matrix (preferably aluminum stearate or charcoal).

The surfactant is a sugar alkyl ester or fatty acid ester (preferably sorbitan monolaurate, sorbitan monomyristate, sorbitan monopalmitate or sorbitan monostearate).

The phospholipase enzyme is phospholipase A1.

(A2) is 1-lauryl-2-lyso-glycerophospholipid.

(A3) is 1-stearoyl-2-lyso glycerophospholipid or 1-palmetto-2-lyso glycerophospholipids

Preferred Method: 1-Monoacyl-2-lyso-glycerophospholipid (A3) is formed when an organic solvent (preferably tert-butanol) is used.

TECHNOLOGY FOCUS - POLYMERS - Preferred Components: The insoluble matrix is an ion-exchange resin, such as Dowex 22 (RTM), Dowex 1x2-400 (RTM), Dowex 2x8-100 (RTM), cellulose phosphate, Amberlite IRA-95 (RTM), Amberlite IRA-200 (RTM), Amberlite IRA-900 (RTM), Amberlite XAD-7 (RTM), Amberlite XAD-16 (RTM), Diannon SA-10A (RTM), Ectola (RTM; cellulose), Sephadex (RTM) or sulfoxyethylcellulose. The surfactant for coating the enzyme is a polyol fatty acid ester or polyol alkyl ether.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Components: The insoluble matrix is selected from celite, alumina, silica gel, calcium carbonate or calcium sulfate.

TECHNOLOGY FOCUS - BIOLOGY - Preferred Enzyme: The enzyme is derived from Aspergillus (strain SANK 11870).

L22 ANSWER 3 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2003-078572 [08] WPIDS

DNN N2003-061082 DNC C2003-020585

TI Cellulose acylate film is formed by subjecting cellulose acylate support of waste photosensitive material to peroxide process and oxidation process and dissolving recovered film in non-chlorine group organic solvent.

DC A11 A89 G06 P81 P83 S06

PA (FUJF) FUJI PHOTO FILM CO LTD

CYC 1

PI JP 2002187959 A 20020705 (200308)\* 15p

ADT JP 2002187959 A JP 2000-386537 20001220

PRAI JP 2000-386537 20001220

AB JP2002187959 A UPAB: 20030204

NOVELTY - A waste material of silver halide photosensitive material which has a cellulose acylate film as support, is taken as raw material. The cellulose acylate film is recovered by peroxide process using an aqueous solution of peroxide and halogen oxidation process using an alkaline water solution of oxidized halogen compound. The recovered film is dissolved in a non-chlorine group organic solvent.

USE - For use as protective layer of optical material and support of silver halide photosensitive material.

ADVANTAGE - The cellulose acylate film is effectively recovered from used photosensitive materials, thus reducing environmental pollution. Effective utilization of waste material is enabled.

Dwg.0/0

TECH UPTX: 20030204

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Process: The cellulose acylate film solution, is then cooled and dissolved at -100 degrees C to -10 degrees C, or heated and dissolved at 70-200 degrees C and 0.3-30 MPa. To 100 mass parts of recovered cellulose acylate, 100-1900 mass parts of new cellulose acylate is mixed. The cellulose acylate solution seals 5-50 mass % of carbon dioxide before heating to 70-200 degrees C and 0.3-30 MPa. 0.001-2 mass % fluorine group surfactant, 0.002-2 mass % of mold releasing agent, 0.001-5 mass % microparticle powder, 0.001-5 mass % ultraviolet absorber or 0.1-20 mass % plasticizer, are added to cellulose acylate. The cellulose acylate film has thickness of 30-250 mum,

preferably 10-200  $\mu\text{m}$ .

Preferred Compounds: The organic solvent is 3-12C ketone, 2-12C ether and/or 2-12C ester. The cellulose acylate solution contains 1-15 mass% of 1-4C alcohol.

L22 ANSWER 4 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-730962 [79] WPIDS

DNC C2002-207040

TI New **biodegradable oxidized cellulose esters** for use as film-forming agents and drug carriers.

DC A11 A96 B04 D22

IN DONG, Y; KUMAR, V

PA (DONG-I) DONG Y; (KUMA-I) KUMAR V; (IOWA) UNIV IOWA RES FOUND

CYC 95

PI US 2002086990 A1 20020704 (200279)\* 9p

WO 2002053599 A2 20020711 (200279) EN

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZM ZW

W: AE AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

ADT US 2002086990 A1 Provisional US 2000-259038P 20001229, US 2001-7866  
20011206; WO 2002053599 A2 WO 2001-US50108 20011221

PRAI US 2000-259038P 20001229; US 2001-7866 20011206

AB US2002086990 A UPAB: 20021209

NOVELTY - **Biodegradable, oxidized cellulose ester** is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for making an oxidized cellulose ester comprising: oxidized cellulose containing at least 3 wt.% carboxylic content to form an oxidized cellulose ester.

USE - The oxidized cellulose esters are for use as film-forming agents, drug carriers, to form monolithic transparent films or biodegradable coatings. They can also be used as an immobilizing matrix in the development of biodegradable controlled and/or sustained release pharmaceutical, agricultural and veterinary compositions.

ADVANTAGE - The oxidized cellulose esters are not only soluble in aqueous alkaline solutions but dissolve in water an/or organic solvents, depending on the nature of the ester moiety and degree of substitution. They are less expensive to produce than some of the most commonly and widely used biodegradable polymers.

Dwg.0/0

TECH UPTX: 20021209

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred ester: The

oxidized cellulose ester has a 3 wt.% carboxylic content, is dried and is soluble in water, ketones, esters, glycol esters, glycol ether acetates, alcohols, methylene chloride, halogenated solvents and aprotic solvents selected from DMSO, DMA, DMF and n-methyl-2-pyrrolidone. The oxidized cellulose ester is of formula (I) or (II).

X = H, Na, K, Ca, NH<sub>4</sub> or NEt<sub>3</sub>H;

R = H, CF<sub>3</sub>, (CH<sub>2</sub>)<sub>n</sub>CH<sub>3</sub> where n = 1-8, (CH<sub>2</sub>)<sub>n</sub>COOH, CY=CZCOOH (where Y and Z are H, Me 1-20C branched alkyl with 1-3 double bonds, 1-20C branched alkenyl with 1-3 double bonds CY=CH<sub>2</sub> (where Y is H, Me or Ph), CH=CHY (where Y is Ph), CH=CYCOOH (where Y is H or Me), (CH<sub>2</sub>)<sub>8</sub>CH=CH(CH<sub>2</sub>)<sub>8</sub>Me or C<sub>6</sub>H(2-6)(COOH)<sub>0-4</sub>, CH<sub>2</sub>CH(COOH)CH<sub>2</sub>-COOH;

w = 0.1-1.0;

x = 0.1-2.0;

n = 30-1500.

**Preferred Process:** The (sic) **acylating** step comprises reacting the **oxidized cellulose** with an organic acid and optionally an anhydride. **Acylation** is in the presence of an acid catalyst selected from sulfuric, o-phosphoric or **perchloric acid** or **zinc chloride** solution. It also takes place in the presence of **DMSO, DMF, DMA** and **dioxane**. The process further comprises soaking the **oxidized cellulose** with a swelling agent (prior to **acylation**) for 5-120 (preferably 30-60) minutes. The swelling agent is selected from **phosphoric acid, isopropyl alcohol, aqueous zinc chloride** solution, water and an amine. The **acylating** step comprises reacting the **oxidized cellulose** with an organic acid chloride (preferably a 1-20C organic acid chloride) in an organic solvent and a base catalyst (selected from pyridines, alkylpyridines, trialkylamines and sodium carbonate). **Acylation** step takes place for 0.5-12 hours. The process involves filtering the **oxidized cellulose ester**, washing the **oxidized cellulose ester** to pH 6-8 and drying it. **Preparation:** The **oxidized cellulose esters** can be prepared by treating **oxidized cellulose** with an excess of an organic acid chloride or organic acid anhydride solvent.

L22 ANSWER 5 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-561211 [60] WPIDS

DNN N2002-444391 DNC C2002-159528

TI **Cellulose acylate** solution for producing **cellulose acylate** film, is obtained by dissolving **cellulose acylate** in mixed solvent of ketone and **ester** which do not contain chlorine group.

DC A11 A89 G06 P81

PA (FUJF) FUJI PHOTO FILM CO LTD

CYC 1

PI JP 2002146098 A 20020522 (200260)\* 12p

ADT JP 2002146098 A JP 2000-346218 20001114

PRAI JP 2000-346218 20001114

AB JP2002146098 A UPAB: 20020919

NOVELTY - A **cellulose acylate** solution is obtained by dissolving a **cellulose acylate** in a mixed solvent of ketone and **ester** which do not contain a chlorine group solvent.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for the **cellulose acylate** film which is produced from the **cellulose acylate** solution.

USE - For producing **cellulose acylate** film (claimed).

ADVANTAGE - The **cellulose acylate** solution has excellent time-dependent stability without using a chlorine group solvent like **methylene chloride**. The film has improved mechanical property, optical property and film surface.  
Dwg.0/0

TECH UPTX: 20020919

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Compounds: The **ester** having 2- 12 carbon number is selected from methyl formate, ethyl formate, methyl acetate, ethyl acetate, gamma-butyrolactone and methyl acetolactone. The ketone has 3-12 carbon number and is chosen from acetone, methyl ethyl ketone, cyclohexanone, cyclopentanone and methyl acetoacetate. Preferred Composition: The mixed solvent further contains 2-40 mass% of univalent alcohol which is an 1-6C aliphatic alcohol. Silica



particle, a plasticizer and an ultraviolet absorber are added to the cellulose acylate film.

L22 ANSWER 6 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-547520 [58] WPIDS

DNC C2002-155211

TI Cellulose acylate solution for preparing a film for optical materials comprises a cellulose acylate dissolved in a chlorine-free solvent which is a mixed solvent comprising a ketone and ester.

DC A11 A89 P81 P83

IN MUKUNOKI, Y; YAMADA, T

PA (FUJF) FUJII PHOTO FILM CO LTD

CYC 97

PI WO 2002038666 A1 20020516 (200258)\* JA 47p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS KE KG KP KR KZ  
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU  
SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

JP 2002146043 A 20020522 (200258) 23p

JP 2002179838 A 20020626 (200258) 12p

JP 2002187149 A 20020702 (200258) 12p

AU 2002012748 A 20020521 (200260)

ADT WO 2002038666 A1 WO 2001-JP9827 20011109; JP 2002146043 A JP 2000-341414  
20001109; JP 2002179838 A JP 2000-377310 20001212; JP 2002187149 A JP  
2000-386538 20001220; AU 2002012748 A AU 2002-12748 20011109

FDT AU 2002012748 A Based on WO 200238666

PRAI JP 2000-386538 20001220; JP 2000-341414 20001109; JP 2000-377310  
20001212

AB WO 200238666 A UPAB: 20020910

NOVELTY - A cellulose acylate solution comprises a cellulose acylate dissolved in a chlorine-free solvent which is a mixed solvent comprising a ketone and ester.

DETAILED DESCRIPTION - The ketone has a solubility parameter of 19 - 21. The ester has a solubility parameter of 19 - 21. The cellulose acylate solution contains a release agent.

USE - The cellulose acylate film made from the solution is for use for optical materials such as protection films for polarization plates and color filters.

ADVANTAGE - The cellulose acylate film has excellent physical strength and flame-retardancy.

Dwg.0/0

TECH UPTX: 20020910

TECHNOLOGY FOCUS - POLYMERS - Preferred solution : The Cl-free solvent contains 2 - 30 wt% of alcohol. The ketone is CH<sub>3</sub>COCH<sub>3</sub>, CH<sub>3</sub>COC<sub>2</sub>H<sub>5</sub>, cyclopentanone or cyclohexanone, the ester is HCOOCH<sub>3</sub>, HCOOC<sub>2</sub>H<sub>5</sub> or CH<sub>3</sub>COOCH<sub>3</sub>, and the alcohol is a 1-6C alcohol. The release agent is an acid, an alkali salt or alkali earth salt having an acidic dissociation number of 4.50 or lower. The acid is a carboxylic acid, sulfonic acid or phosphoric acid, and is HCOOH, halo-acetic acid, halo-propionic acid, acrylic acid, malonic acid, succinic acid, glutanic acid, fumalic acid, glucolic acid, lactic acid, maleinic acid, tartaric acid or citric acid. The acidic dissociation number of the solution of 1.93 - 4.50. Preferred release agent : The amount of the release agent contained in the solution is 1 x 10<sup>-9</sup> - 3 x 10<sup>-5</sup> mol per 1g of cellulose acylate. The release agent is represented by general formula (1) or (2).

(R1-B1-O)n1- P(=O)-(OM1)n2 (1)

R2-B2-X (2)  
 R1, R2 = 4-40Calkyl, alkenyl, aralkyl or aryl group ;  
 M1 = alkyl metal, ammonia or lower alkyl amine ;  
 B1, B2 = divalent bond ;  
 X = carboxylic acid or its salt, sulfonic acid or its salt, sulfate ester or its salt ;  
 n1 = 1 or 2 ;  
 n2 = 3 - n1

The **cellulose acylation** solution contains 0.001 - 2 wt% of the compound represented by (1) or (2). Preferred process : The **cellulose acylate** is dissolved in the Cl-free mixture solution at (-80) - (-10) degreesC or 80 - 220 degreesC. The film is produced by forming two or more layers of the **cellulose acylate** solutions, and the **cellulose** solution for forming the outermost layer has the same as or lower than that for forming the inside layer. The concentration of the solution forming the outermost layer is 0.99 - 0.80 that of the inside layer.

L22 ANSWER 7 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-037634 [05] WPIDS

DNC C2002-010907

TI **Acylation of cellulose** used for manufacturing **cellulose ester**, involves absorbing **acylating** agent into **cellulose** followed by grinding the obtained **cellulose** using a grinding medium.

DC A11 F09

PA (KEIZ-N) KEIZAI SANGYOSHO SANGYO GIJUTSU SOGO KEN

CYC 1

PI JP 2001261701 A 20010926 (200205)\* 6p

JP 3281921 B2 20020513 (200234) 6p

ADT JP 2001261701 A JP 2000-82071 20000323; JP 3281921 B2 JP 2000-82071 20000323

FDT JP 3281921 B2 Previous Publ. JP 2001261701

PRAI JP 2000-82071 20000323

AB JP2001261701 A UPAB: 20020123

NOVELTY - An **acylating** agent is absorbed into **cellulose**, and the obtained **cellulose** is ground in a grinding medium.

USE - Used for manufacturing partial or complete **cellulose esters**, such as **cellulose acetate** used for photographic films, acetate rayon, **cellulose lacquer** and plastic material.

ADVANTAGE - The **acylated** **cellulose** comprising high acyl amount is manufactured easily and inexpensively in a short period of time. The reaction product obtained is refined easily. The use of catalyst for **acylation** of **cellulose** is eliminated, thereby the need of separation of the catalyst is eliminated.

Dwg.0/10

TECH UPTX: 20020123

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred **Acylating Agent**: The **acylating** agent is lower fatty acid **anhydride** or a mixture of lower fatty acid **anhydride** and lower fatty acid. The mixture of lower fatty acid **anhydride** and lower fatty acid is acetic acid and acetic **anhydride** in a weight ratio of 30:70 or 20:80.

L22 ANSWER 8 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2001-112499 [12] WPIDS

CR 2001-091751 [10]

DNC C2001-033517

TI Method for controlling the flux of penetrants across an adaptable semi-permeable barrier is useful for administering an agent to a mammalian

body or a plant and for generating an immune response by vaccinating the mammal.

DC A18 A28 A96 B05 B07 D16 D22

IN CEVC, G; RICHARDSEN, H; WEILAND-WAIBEL, A; WEILAND-WEIBEL, A

PA (IDEA-N) IDEA AG; (CEVC-I) CEVC G; (RICH-I) RICHARDSEN H; (WEIL-I) WEILAND-WAIBEL A

CYC 95

PI WO 2001001963 A1 20010111 (200112)\* EN 110p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2000061557 A 20010122 (200125)

BR 2000012178 A 20020312 (200226)

EP 1189598 A1 20020327 (200229) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI

CZ 2002000038 A3 20020515 (200241)

CN 1359288 A 20020717 (200268)

HU 2002001454 A2 20021228 (200308)

JP 2003503442 W 20030128 (200309) 109p

US 2003099694 A1 20030529 (200337)

ADT WO 2001001963 A1 WO 2000-EP6367 20000705; AU 2000061557 A AU 2000-61557  
20000705; BR 2000012178 A BR 2000-12178 20000705; WO 2000-EP6367 20000705;  
EP 1189598 A1 EP 2000-947939 20000705; WO 2000-EP6367 20000705; CZ  
2002000038 A3 WO 2000-EP6367 20000705; CZ 2002-38 20000705; CN 1359288 A  
CN 2000-809916 20000705; HU 2002001454 A2 WO 2000-EP6367 20000705; HU  
2002-1454 20000705; JP 2003503442 W WO 2000-EP6367 20000705; JP  
2001-507458 20000705; US 2003099694 A1 Cont of WO 2000-EP6367 20000705; US  
2002-37480 20020104

FDT AU 2000061557 A Based on WO 200101963; BR 2000012178 A Based on WO  
200101963; EP 1189598 A1 Based on WO 200101963; CZ 2002000038 A3 Based on  
WO 200101963; HU 2002001454 A2 Based on WO 200101963; JP 2003503442 W  
Based on WO 200101963

PRAI WO 1999-EP4659 19990705

AB WO 200101963 A UPAB: 20030612

NOVELTY - A method for controlling the flux of penetrants across an  
adaptable semi-permeable porous barrier is new.

DETAILED DESCRIPTION - A method for controlling the flux of  
penetrants across an adaptable semi-permeable membrane comprises  
suspending the penetrants in a polar liquid in the form of fluid droplets  
surrounded by a membrane-like coating comprising at least two kinds of  
amphiphilic substances with a tendency to aggregate, selecting a dose of  
the penetrants to control the flux of the penetrants across the barrier  
and applying the selected dose of the formulation onto the area of the  
barrier. The amphiphilic substances differ by a factor of at least 10 in  
solubility in the polar liquid and the homo-aggregates of the more soluble  
substance and hetero-aggregates have a preferred average diameter smaller  
than the diameter of the homo-aggregates of the less soluble substance.  
The more soluble substance tends to solubilize the droplet and comprises  
up to 99% of the solubilizing concentration or saturating concentration in  
the unstabilized droplet. The presence of the more soluble substance  
lowers the average elastic energy of the coating by at least 5 times  
preferably more than 10 times the average elastic energy of red blood  
cells or of phospholipid bilayers with fluid aliphatic chains. The  
penetrants are able to transport agents through the pores of the barrier  
or enable agent permeation through the pores after the penetrants have  
entered the pores.

INDEPENDENT CLAIMS are included for:

- (i) a kit containing the formulation;
- (ii) a patch containing the formulation; and
- (iii) a method of administering an agent to a mammalian body or plant comprising the novel method.

USE - The method is useful for administering an agent to a mammalian body or a plant, for generating an immune response by vaccinating the mammal and for treating inflammatory disease, dermatosis, kidney or liver failure, adrenal insufficiency, aspiration syndrome, Behcet syndrome, bites and stings, blood disorders (cold-hemagglutinin disease), hemolytic anaemia, hypereosinophilic, hypoplastic anaemia, macroglobulinaemia and thrombocytopenic purpura), bone disorders, cerebral oedema, Cogan's syndrome, congenital adrenal hyperplasia, connective tissue disorders (lichen, lupus erythematosus, polymyalgia rheumatica, polymyositis and dermatomyositis), epilepsy, eye disorders (cataracts), Graves' ophthalmopathy, hemangioma, herpes infections, neuropathies, retinal vasculitis, scleritis, gastro-intestinal disorders (inflammatory bowel disease, nausea and oesophageal damage), hypercalcaemia, infections, Kawasaki disease, myasthenia gravis, pain syndromes, polyneuropathies, pancreatitis, respiratory disorders (asthma), rheumatoid disease, osteoarthritis, rhinitis, sarcoidosis, skin diseases, alopecia, eczema, erythema multiforme, lichen, pemphigus and pemphigoid, psoriasis, pyoderma gangrenosum, urticaria and thyroid and vascular disorders.

ADVANTAGE - Increasing the applied dose above a threshold level affects both the drug/penetrant distribution and also determines the rate of penetrant transport across the barrier.  
Dwg.0/14

TECH

UPTX: 20010302

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Composition: The flux is increased by enlarging the applied dose per area of the penetrants and the pH of the composition is preferably 3 to 10, especially 5 to 8. The formulation preferably comprises a thickening agent to raise the viscosity to maximally 5 Nm/s, especially 0.2Nm/s, an antioxidant to reduce the increase of oxidation index to less than 100% per 6 months, preferably 50% per 12 months and/or a microbicide to reduce the bacterial count after 4 days, preferably after 1 day, to less than 100/g for aerobic bacteria, less than 10 for entero-bacteria and less than 1 for Pseudomonas aeruginosa or Staphylococcus aureus. At least one microbicide is added in an amount that reduces the bacterial count of 1 million germs added per gram of total mass of the formulation after a period of 3 days and preferably after a period of 1 day. The thickening agent is selected from the class of pharmaceutically acceptable hydrophilic polymers, such as partially etherified cellulose derivatives, like carboxymethyl-, hydroxyethyl-, hydroxypropyl-, hydroxypropylmethyl- or methyl-cellulose; completely synthetic hydrophilic polymers such as polyacrylates, polymethacrylates, poly(hydroxyethyl)-, poly(hydroxypropyl)-, poly(hydroxypropylmethyl)methacrylates, polyacrylonitriles, methallyl-sulfonates, polyethylenes, polyoxyethylenes, polyethylene glycols, polyethylene glycol-lactides, polyethylene glycol-diacrylates, polyvinylpyrrolidones, polyvinyl alcohols, poly(propylmethacrylimides), poly(propylene fumarate-co-ethylene glycols), poloxamers, polyaspartamides, (hydrazine cross-linked) hyaluronic acids, silicones; natural gums comprising alginates, carrageenans, guar-gums, gelatins, tragacanth, (amidated) pectins, xanthans, chitosan collagens, agaroses; mixtures and further derivatives or co-polymers of them and / or other pharmaceutically, or at least biologically, acceptable polymers. The concentration of the polymer is in the range between 0.01 w-% and 10 w-%, more preferably in the range between 0.1 w-% and 5 w-%, even more preferably in the range between 0.25 w-% and 3.5 w-% and most preferably in the range between 0.5 w-% and 2 w-%. The anti-oxidant is

selected from synthetic phenolic anti-oxidants, such as butylated hydroxyanisol (BHA), butylated hydroxytoluene (BHT) and di-tert-butylphenol (LY 178002, LY256548, HWA- 13 1, BF-389, Cl- 986, PD- 127443, E-5 119, BI-L-239XX, etc.), tertiary butylhydroquinone (TBHQ), propyl gallate (PG), 1 -O-hexyl-2,3,5-trimethylhydroquinone (HTHQ); aromatic amines (such as diphenylamine, p-alkylthio-o-anisidine, ethylenediamine derivatives, carbazol, tetrahydroindenoindol); phenols and phenolic acids (such as gualacol, hydroquinone, vanillin, gallic acids and their esters, protocatechuic acid, quinic acid, syringic acid, ellagic acid, salicylic acid, nordihydroguaiaretic acid (NDGA), eugenol; tocopherols (including tocopherols (alpha, beta, gamma, delta) and their derivatives, such as tocopheryl-acylate (e.g. -acetate, -laurate, myristate, -palmitate, -oleate, Aioleate, etc., or any other suitable tocopheryl-lipoate), tocopheryl-POE-succinate; trolox and corresponding amide- and thiocarboxamide analogues; ascorbic acid and its salts, isoascorbate, (2 or 3 or 6)-o-alkylascorbic acids, ascorbyl esters (e.g. 6-o-lauroyl, myristoyl, paimitoyl-, oleoyl, or linoleoyl-L-ascorbic acid, etc.); non-steroidal anti-inflammatory agents (NSAIDs), such as indomethacin, diclofenac, mefenamic acid, flufenamic acid, phenylbutazone, oxyphenbutazone acetylsalicylic acid, naproxen, diflunisal, ibuprofen, ketoprofen, piroxicam, penicillamine, penicillamine disulphide, primaquine, quinacrine, chloroquine, hydroxychloroquine, azathioprine, phenobarbital, acetaminophen); aminosalicylic acids and derivatives; methotrexate, probucol, antiarrhythmics (e.g. amiodarone, aprindine, asocainol), ambroxol, tamoxifen, b-hydroxytamoxifen; calcium antagonists (such as nifedipine, nisoldipine, nimodipine, nicardipine, nilvadipine), beta-receptor blockers (e.g. atenolol, propranolol, nebivolol); sodium bisulphite, sodium metabisulphite, thiourea; chelating agents, such as EDTA, GDTA, desferal; endogenous defence systems, such as transferrin, lactoferrin, ferritin, ceruloplasmin, haptoglobin, haemopexin, albumin, glucose, ubiquinol- 10; enzymatic antioxidants, such as superoxide dismutase and metal complexes with a similar activity, including catalase, glutathione peroxidase, and less complex molecules, such as beta-carotene, bilirubin, uric acid; flavonoids (e.g. flavones, flavonols, flavonones, flavanones, chalcones, anthocyanins), N-acetylcystein, mesna, glutathione, thiohistidine derivatives, triazoles; tannins, cinnamic acid, hydroxycinnamic acids and their esters (e.g. coumaric acids and esters, caffeic acid and their esters, ferulic acid, (iso-) chlorogenic acid, sinapic acid); spice extracts (e.g. from clove, cinnamon, sage, rosemary, mace, oregano, allspice, nutmeg); carnosic acid, camosol, carsolic acid; rosmarinic acid, rosmarindiphenol, gentisic acid, ferulic acid; oat flour extracts, such as avenanthramide 1 and 2; thioethers, dithioethers, sulfoxides, tetraalkylthiurarn disulphides; phytic acid, steroid derivatives (e.g. U74006F); tryptophan metabolites (e.g. 3-hydroxykynurenine, 3-hydroxyanthranilic acid), and organochalcogenides, or else is an oxidation suppressing enzyme. The concentration of BHA or BHT is between 0.001 and 2 w-% and especially between 0.005 and 0.02 w-%; of TBHQ and PG is between 0.001 and 2 w-%, most preferably is between 0.01 and 0.02 w-%; of tocopherols is between 0.005 and 5 w-%, most preferably is between 0.05 and 0.075 w-%; of ascorbic acid esters is between 0.001 and 5, most preferably is between 0.01 and 0.15 w-%; of ascorbic acid is between 0.001 and 5, most preferably is between 0.01 and 0.1 w-% of sodium bisulphite or sodium metabisulphite is between 0.001 and 5, most preferably is between 0.01 and 0.15 w-%; of thiourea is between 0.0001 and 2 w-% and most preferably is between 0.001-0.01 w-% most typically 0.005 w-%; of cystein is between 0.01 and 5, most typically 0.5

w-%; of monothioglycerol is between 0.01 and 5 w-%, most typically 0.5 w-%; of NDGA is between 0.0005-2 w-% most typically 0.01 w-%; of glutathione is between 0.005 and 5 w-%, most typically 0.1 w-%; of EDTA is between 0.001 and 5 w-%, most typically between 0.05 and 0.975 w-%; of citric acid is between 0.001 and 5 w-%, most typically between 0.3 and 2 w-%.

The microbicide is selected from short chain alcohols, such as ethyl and isopropyl alcohol, chlorbutanol, benzyl alcohol, chlorbenzyl alcohol, dichlorbenzylalcohol; hexachlorophene; phenolic compounds, such as cresol, 4-chloro-m-cresol, p-chloro-m-xlenol, dichlorophene, hexachlorophene, povidon-iodine; parabens, especially alkyl-paraben, such as methyl-, ethyl-, propyl-, or butyl-paraben, benzyl-paraben; acids, such as sorbic acid, benzoic acid and its salts; quaternary ammonium compounds, such as alkonium salts, e.g. benzalkonium salts, especially the chlorides or bromides, cetrimonium salts, e.g. the bromide; phenoalkeciniurn salt, such as phenododecinium bromide, cetylpyridinium chloride or other such salts; mercurium compounds, such as phenylmercuric acetate, borate, or nitrate, thiomersal; chlorhexidine or its gluconate; antibioticly active compounds of biological origin, or a mixture of it.

The bulk concentration of short chain alcohols in the case of ethyl, propyl, butyl or benzyl alcohol is up to 10 w-%, most preferably is in the range between 0.3-3 w-% and in the case of chlorobutanol is in the range between 0.3-0.6 w-% bulk concentration of parabens, especially in the case of methyl paraben is in the range between 0.05-0.2 w-% and in the case of propyl paraben is in the range between 0.002-0.02 w-% bulk concentration of sorbic acid is in the range between 0.05-0.2 w-% and in the case of benzoic acid is in the range between 0.1-0.5 w-% bulk concentration of phenols, triclosan, is in the range between 0.1-0.3 w-% and bulk concentration of chlorhexidine is in the range between 0.01-0.05 w-%.

The bulk concentration of short chain alcohols in the case of ethyl, propyl, butyl or benzyl alcohol is up to 10 w-%, most preferably is in the range between 0.3-3 w-% and in the case of chlorobutanol is in the range between 0.3-0.6 w-% bulk concentration of parabens, especially in the case of methyl paraben is in the range between 0.05-0.2 w-% and in the case of propyl paraben is in the range between 0.002-0.02 w-% bulk concentration of sorbic acid is in the range between 0.05-0.2 w-% and in the case of benzoic acid is in the range between 0.1-0.5 w-% bulk concentration of phenols, triclosan, is in the range between 0.1-0.3 w-% and bulk concentration of chlorhexidine is in the range between 0.01-0.05 w-%.

The less soluble amongst the aggregating substances is a lipid or lipid-like material, especially a polar lipid, whereas the substance which is more soluble in the suspending liquid and which lowers the average elastic energy of the droplet is a surfactant or else has surfactant-like properties and / or is a form of said lipid or lipid-like material which is comparably as soluble as said surfactant or the surfactant-like material.

The lipid or lipid-like material is a lipid or a lipoid from a biological source or a corresponding synthetic lipid or any of its modifications, the lipid preferably belonging to the class of pure phospholipids corresponding to the general formula where R1 and R2 is an aliphatic chain, typically a C10-20 acyl, or -alkyl or partly unsaturated fatty acid residue, in particular, an oleoyl-, palmitoeloyl-, elaidoyl-, linoleyl-, linolenyl-, linolenoyl-, arachidoyl-, vaccinyl-, lauroyl-, myristoyl-, palmitoyl-, or stearoyl chain; and where R3 is hydrogen, 2-trimethylamino-1-ethyl 2-amino-1-ethyl, C1-4-alkyl, C1-5-alkyl substituted with carboxy, C2-5-alkyl substituted with hydroxy, C2-5-alkyl substituted with carboxy and hydroxy, or C2-5 alkyl substituted with carboxy and amino, inositol, sphingosine, or salts of said substances, said lipid comprising also glycerides, isoprenoid lipids, steroids, sterines or sterols, of sulphur- or carbohydrate-containing lipids, or any

other bilayer-forming lipids, in particular half-protonated fluid fatty acids, said lipid is selected from the group comprising phosphatidylcholines, phosphatidylethanolamines, phosphatidylglycerols, phosphatidylinositols, phosphatidic acids, phosphatidylserines, sphingomyelins or other sphingophospholipids, glycosphingolipids (including cerebrosides, ceramidepolyhexosides, sulphatides, sphingoplasmalogens), gangliosides and other glycolipids or synthetic lipids, in particular with corresponding sphingosine derivatives, or any other glycolipids, whereby two similar or different chains can be ester-groups-linked to the backbone (as in diacyl and dialkenoyl compound) or be attached to the backbone with ether bonds, as in dialkyl-lipids. The surfactant or surfactant-like material is a nonionic, a zwitterionic, an anionic or a cationic surfactant, especially a fatty-acid or -alcohol, an alkyl-trimethylammonium salt, an alkylsulphate salt, a monovalent salt of cholate, deoxycholate, glycocholate, glycodeoxycholate, taurodeoxycholate, taurocholate, etc., an acyl- or alkanoyl-dimethyl-aminoxide, esp. a dodecyl- dimethyl-aminoxide, an alkyl- or alkanoyl-N-methylglucamide, N- alkyl-NN- dimethylglycine, 3-(acyldimethylammonio)-alkanesulphonate, N-acyl- sulphobetaine, a polyethylene-glycol-octylphenyl ether, esp. a nonaethylene-glycol-octylphenyl ether, a polyethylene-acyl ether, esp. a nonaethylen-dodecyl ether, a polyethylene-glycol-isoacyl ether, esp. a octaethylene-glycol-isotridecyl ether, polyethylene-acyl ether, esp. octaethylenedodecyl ether, polyethylene- glycol-sorbitane-acyl ester, such as polyethylenglykol-20-monolaurate (Tween 20) or polyethylenglykol-20-sorbitan-monooleate (Tween 80), a polyhydroxyethylene- acyl ether, esp. polyhydroxyethylene- lauryl, -myristoyl, -cetylstearyl, or -oleoyl ether, as in polyhydroxyethylene-4 or 6 or 8 or 10 or 12, etc., -lauryl ether (as in Brij series), or in the corresponding ester, e.g. of polyhydroxyethylen-8-stearate (Myd 45), -laurate or -oleate type, or in polyethoxylated castor oil 40, a sorbitane- monoalkylate (e.g. in Arlacel or Span), esp. sorbitane-monolaurate, an acyl- or alkanoyl-N-methylglucamide, esp. in or decanoyl- or dodecanoyl-N- methylglucamide, an alkyl-sulphate (salt), e.g. in lauryl- or oleoyl-sulphate, sodium deoxycholate, sodium glycodeoxycholate, sodium oleate, sodium taurate, a fatty acid salt, such as sodium elaidate, sodium linoleate, sodium laurate, a lysophospholipid, such as n-octadecylene(=oleoyl)-glycerophosphatidic acid, - phosphorylglycerol, or -phosphorylserine, n-acyl-, e.g. lauryl or oleoyl-glycero- phosphatidic acid, -phosphorylglycerol, or -phosphorylserine, n-tetradecyl-glycero-phosphatidic acid, -phosphorylglycerol, or - phosphorylserine, a corresponding palmitoeloyl, elaidoyl-, vaccenyl-lysophospholipid or a corresponding short-chain phospholipid, or else a surface-active polypeptide.

The average diameter of the penetrant is preferably 30 to 500 nm, especially 60 to 150 nm and the total dry weight of the droplets is preferably 0.01 to 40%, especially 0.5 to 20%, of the formulation. The total dry weight of droplets in a formulation is selected to increase the formulation viscosity to maximally 200 mPas, especially up to 8 mPas. At least one amphiphilic substance and/or at least one edgeactive substance or surfactant, and/or at least one hydrophilic fluid and the agent are mixed, if required separately, to form a solution, the resulting mixtures or solutions are then combined subsequently to induce, preferably by action of mechanical energy such as shaking, stirring, vibrations, homogenisation, ultrasonication, shearing, freezing and thawing, or filtration using convenient driving pressure, the formation of penetrants that associate with and/or incorporate the agent. The amphiphilic substances are dissolved in volatile solvents, such as alcohols, especially ethanol, or in other pharmaceutically acceptable organic solvents, such as ethanol, 1- and 2-propanol, benzyl alcohol, propylene glycol, polyethylene glycol

or glycerol, other pharmaceutically acceptable organic solvents, such as undercooled gas, especially supercritical carbon dioxide, which are then removed, especially by evaporation or dilution, prior to making the final preparation. The formation of the penetrants may be induced by the addition of required substances into a fluid phase, evaporation from a reverse phase, by injection or dialysis, if necessary under the influence of mechanical stress, such as shaking, stirring, in especially high velocity stirring, vibrating, homogenising, ultrasonication, shearing, freezing and thawing, or filtration using convenient, in especially low (1 MPa) or intermediate (up to 10 MPa), driving pressure. The formation of the penetrants may be induced by filtration, the filtering material having pores sized between 0.01 microm and 0.8 microm, especially between 0.05 microm and 0.15 microm, where several filters may be used sequentially or in parallel. The agents and penetrants are made to associate, at least partly after the formation of the penetrants; e.g. after injecting a solution of the drug in a pharmaceutically acceptable fluid, such as ethanol, 1- and 2-propanol, benzyl alcohol, propylene glycol, polyethylene glycol or glycerol into the suspending medium and simultaneously with penetrant formation, if required using the drug co-solution and at least some, penetrant ingredients. The penetrants, with which the agent is associated, are prepared immediately before the application of the formulation, if convenient, from a suitable concentrate or a lyophilisate. Preferred Kit: The kit comprises a device for administering a formulation contained in a bottle or any other packaging vessel.

Preferred Patch: The patch comprises a non-occlusive backing liner and an inner liner, where the backing liner and the inner liner define a reservoir and/or a matrix layer. The non-occlusive backing liner exhibits a mean vapor transmission rate (MVTR) of more than 1000 g/m squared day, preferably of more than 10.000 g/M squared day and has pores of smaller than 100 nm, preferably of smaller than 30 nm. The non-occlusive backing liner comprises a polyurethane membrane, preferably a polyester track-etched porous membrane, more preferably a polycarbonate track-etched porous membrane and most preferably a polyethylene microporous membrane. The inner liner prevents unwanted release of the formulation from the patch during storage and enables rapid skin wetting when contacted with the skin. The inner liner comprises a homogeneous membrane, preferably a polyester track-etched porous membrane or a polycarbonate track-etched. The membranes have a pore density of up to 5%, most preferably of more than 25% and/or a pore size in the range between 20 nm and 200 nm, most preferably between 80 nm and 120 nm. The inner liner comprises a hydrophobic mesh-membrane and/or a nonwoven fleece with mesh openings formed by hydrophobic threads. The inner liner comprises a microporous polyethylene membrane having average pore sizes in the range of between 50 nm to 3000 nm, especially of about 1500 nm.

The patch comprises a pressure sensitive adhesive layer, preferably an adhesive layer comprising polyacrylate, polyisobutylene, silicone, ethylene vinyl acetate copolymer, polyvinylpyrrolidone or polyethylene oxide hydrogel. The formulation viscosity is up to maximally 200 mPas, especially up to 8 mPas. The patch comprises one or more additional layers comprising desiccant containing layers, matrix layers, foam tape layers and/or protective layers. The patch comprises at least two compartments, which are separated from each other during storage. At least one of the compartments is inside and/or outside the patch. The formulation and/or the individual formulation components and/or the agent and/or the suspension/dispersion of penetrants without the agent are kept during the storage in several, preferably less than 5, especially in 2 separate compartments of the patch which, in case, are combined prior to or during or after the application of the patch. The outer compartment(s) comprise(s) injection systems, which are connected to the reservoir. The compartments are inside the reservoir, which is defined by the backing



liner and the inner liner. The compartments are vertically stacked and/or are arranged side-by-side and / or one compartment is included in a second compartment, preferably without being fixed to the second compartment. The compartments are separated from each other by a controllably openable barrier, preferably a membrane and/or by a plug and/or by a compartment-forming lamination. Combining and mixing of the ingredients of the compartments is achieved by direct mechanical action, such as pressing, rubbing, kneading, twisting, tearing and /or indirectly by changing the temperature, osmotic pressure or electrical potential.

L22 ANSWER 9 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2000-075671 [07] WPIDS

DNC C2000-022183

TI New method for preparation of cellulose **acylate** solution without using chlorine containing organic solvent - and film which is useful for silver halide photographic film base and liquid crystal picture image display etc..

DC A11 A89 G06 L03 U14

PA (KONS) KONICA CORP

CYC 1

PI JP 11322947 A 19991126 (200007)\* 17p

ADT JP 11322947 A JP 1998-132000 19980514

PRAI JP 1998-132000 19980514

AB JP 11322947 A UPAB: 20000209

NOVELTY - A method for preparing **cellulose acylate** soln. comprises treating a mixture containing **cellulose acylate** having OH of which is substituted by acyl having at least 3 C and mixed solvent of mainly not chlorinated organic solvent at a pressure of 10 - 5,000 kgf/cm<sup>2</sup> and another treating its mixture at 0.1 - 10 kgf/cm<sup>2</sup>. DETAILED DESCRIPTION - The solvent to be used is at least one of **esters**, ketones and ethers having 3 -12 C, and preferably contains at least 50 wt.% methyl acetate or acetone and optionally contains 1- 6 C alcohol.

USE - The film is useful for silver halide photographic film base and liquid crystal picture image display etc. and improved in transparency and mechanical strength.

ADVANTAGE - The method is conducted without using any chlorinated organic solvent such as **methylene chloride** concerns of environmental problems.

Dwg.0/0

L22 ANSWER 10 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1999-010698 [02] WPIDS

DNC C1999-003728

TI Composition for treatment of surfaces contacting with foodstuffs to prevent adhesion of dirt and dust - contains water, hygroscopic component, preservative and thickening agent..

DC A97 E19 G04 P43

IN LUEDECKE, W; TYBORSKI, T; LUEDECKE, W

PA (HENK) HENKEL ECOLAB GMBH & CO OHG; (LUED-I) LUEDECKE W; (TYBO-I) TYBORSKI T

CYC 28

PI DE 19721590 A1 19981126 (199902)\* DE 7p

WO 9853021 A1 19981126 (199902) DE

RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: AU BR CA CN JP MX NZ US

AU 9879126 A 19981211 (199917)

ZA 9804376 A 20000126 (200011) 13p

EP 983326 A1 20000308 (200017) DE

R: AT BE CH DE DK ES FI FR GB GR IE IT LI NL PT SE

BR 9809674 A 20000711 (200041)  
 CN 1256706 A 20000614 (200048)  
 AU 725810 B 20001019 (200057)  
 NZ 501216 A 20010427 (200128)  
 MX 9910520 A1 20000501 (200129)  
 JP 2001526721 W 20011218 (200203) 14p  
 US 2002136826 A1 20020926 (200265)

ADT DE 19721590 A1 DE 1997-19721590 19970523; WO 9853021 A1 WO 1998-EP2849 19980514; AU 9879126 A AU 1998-79126 19980514; ZA 9804376 A ZA 1998-4376 19980522; EP 983326 A1 EP 1998-929314 19980514, WO 1998-EP2849 19980514; BR 9809674 A BR 1998-9674 19980514, WO 1998-EP2849 19980514; CN 1256706 A CN 1998-805224 19980514; AU 725810 B AU 1998-79126 19980514; NZ 501216 A NZ 1998-501216 19980514, WO 1998-EP2849 19980514; MX 9910520 A1 MX 1999-10520 19991116; JP 2001526721 W JP 1998-549914 19980514, WO 1998-EP2849 19980514; US 2002136826 A1 WO 1998-EP2849 19980514, US 1999-424401 19991123

FDT AU 9879126 A Based on WO 9853021; EP 983326 A1 Based on WO 9853021; BR 9809674 A Based on WO 9853021; AU 725810 B Previous Publ. AU 9879126, Based on WO 9853021; NZ 501216 A Based on WO 9853021; JP 2001526721 W Based on WO 9853021

PRAI DE 1997-19721590 19970523

AB DE 19721590 A UPAB: 19990113

A surface treatment composition (I) contains 90-98.5 wt.% water, 1-4 wt. % of a hygroscopic component, 0.2-2 wt.% preservative and thickening agent such that the viscosity is 2,000-10,000 mPa.s (at 22 deg. C, as measured by a Brookfield viscometer, No. 3 spindle, 12 rpm).

Preferably (I) contains 0.3-2 wt.% thickening agent. The hygroscopic component is glycerine, aluminium oxide, sodium carbonate, potassium carbonate, calcium carbonate, magnesium carbonate, calcium chloride, potassium chloride, colloidal silicic acid, sodium silicate, calcium silicate, aluminium silicate or propylene glycol. The preservative is sorbic acid, benzoic acid, citric acid or formic acid including salts thereof, para-hydroxy benzoic acid-ethyl ester and sodium salt thereof parahydroxybenzoic acid - propyl ester and sodium salt thereof and parahydroxybenzoic acid methyl ester and sodium salt thereof. The thickening agent is a mono- or diglycderide of an edible fat, starch (oxidatively degraded), agar, sodium alginate, potassium alginate or calcium alginate, carrageen, tragacanth, xanthan, cellulose, methyl cellulose, hydroxypropylcellulose, hydroxypropylmethyl cellulose, carboxyethyl cellulose, pectin, propylene glycol alginate, acylated distarch phosphate, etc.

USE - The composition (I) is useful for the treatment of surfaces that come into contact with foodstuffs (claimed).

ADVANTAGE - The composition (I) is non-drying and prevents the adhesion of dust and dirt to metallic, glass, ceramic and plastic substrates.

Dwg.0/0

L22 ANSWER 11 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1997-261303 [24] WPIDS

DNC C1997-084615

TI High yield acylated di amino-tri pheno-dioxazine cpds. prepn. - by reducing di amino-tri pheno-dioxazine chromophore to leuco cpd., acylation and re-oxidn., for dyeing and printing cellulose, or polyamide.

DC A60 E23 F06

IN HERD, K; SCHUMACHER, C

PA (DYST-N) DYSTAR TEXTILFARBEN GMBH & CO DEUT AG; (DYST-N) DYSTAR TEXTILFARBEN GMBH & CO DEUT KG; (DYST-N) DYSTAR TEXTILFARBEN GMBH

CYC 10

PI EP 773264 A1 19970514 (199724)\* DE 51p  
 R: CH DE FR GB IT LI NL  
 DE 19541985 A1 19970515 (199725) 43p  
 JP 09169920 A 19970630 (199736) 46p  
 US 5696258 A 19971209 (199804) 30p  
 KR 98034849 A 19980805 (199933)#  
 US 5944854 A 19990831 (199942)  
 EP 773264 B1 20011010 (200167) . DE  
 R: CH DE FR GB IT LI NL  
 DE 59607872 G 20011115 (200176)

ADT EP 773264 A1 EP 1996-117605 19961104; DE 19541985 A1 DE 1995-19541985  
 19951110; JP 09169920 A JP 1996-296753 19961108; US 5696258 A US  
 1996-744422 19961108; KR 98034849 A KR 1996-53035 19961109; US 5944854 A  
 Div ex US 1996-744422 19961108, US 1997-893924 19970715; EP 773264 B1 EP  
 1996-117605 19961104; DE 59607872 G DE 1996-507872 19961104, EP  
 1996-117605 19961104

FDT US 5944854 A Div ex US 5696258; DE 59607872 G Based on EP 773264

PRAI DE 1995-19541985 19951110; KR 1996-53035 19961109

AB EP 773264 A UPAB: 19970612  
 A method of preparing acylated 3,10-diamino-tri-pheno-dioxazine of formula  
 (I) comprises:  
 (i) reducing a diamino-tri-pheno-dioxazine of formula (V) to a leuco  
 compound of formula (III);  
 (ii) reacting (IV) with a reactive derivative based on the Z1 and/or  
 Z2 group; and  
 (iii) re-oxidising the resultant leuco compound of formula (IV) to  
 (I).  
 R1, R2 = H or 1-4 C alkyl, which may be mono- or di-substituted by  
 hydroxy, 1-4 C alkoxy, sulpho or sulphato;  
 X1, X2 = halogen, H, 1-6 C alkyl, phenyl, phenoxy or 1-4 C alkoxy;  
 E = sulpho, carboxy, 1-4 C alkylsulphonyl, SO<sub>2</sub>Y, -SO<sub>2</sub>NR<sub>3</sub>R<sub>4</sub> or  
 -CONR<sub>3</sub>R<sub>4</sub>;  
 Y = vinyl or CH<sub>2</sub>CH<sub>2</sub>V;  
 V = OH or a labile (thio)sulphato, phosphato or halogen group;  
 R3, R4 = H, phenyl or 1-4 C alkyl, which may be substituted by OH,  
 carboxy, sulpho or sulphato or SO<sub>2</sub>Y; or NR<sub>3</sub>R<sub>4</sub> is a 5- or 6-membered  
 heterocycle, optionally with 1-3 more heteroatoms of N, O and S in the  
 ring;  
 V1, V2 = H, sulpho, methoxy, methyl or halogen; and  
 Z1, Z2 = acyl, unsubstituted, alkylated or arylated aminocarbonyl,  
 sulphonyl or N-heteroaryl.  
 T = H, Z1 or Z2.  
 Also claimed are:  
 (i) acylated 3,10-diamino-tri-pheno-dioxazine-disulphonic acids and  
 salts (IA-IF) of formula (I) with specified substituents; and  
 (ii) intermediate leuco compounds (III) and (IV) formed in the  
 preparation of (I).  
 USE - (IA-IF) are used as direct or reactive dyes for dyeing or  
 printing fibrous cellulose, polyamide and/or protein materials, preferably  
 in the presence of 0-20 g electrolyte salt/l dye solution (all claimed).  
 In general, (I) are useful as direct or reactive dyes for cellulose, e.g.  
 cotton, viscose or chemically modified cellulose, and as acid or reactive  
 dyes for polyamides, e.g. polyamide-6 or -6,6, or proteins, e.g. wool or  
 silk, and mixtures, e.g. cotton/polyester or cotton/polyamide. They are  
 suitable for exhaustion or pad, e.g. pad-short dwell or pad-steam  
 application.  
 ADVANTAGE - The new method of preparation gives better yields and  
 product quality than usual. (I; Z1 and/or Z2 = a reactive group of the  
 pyrimidine series) give deep colours and have good fastness to washing.  
 Dyeing requires little or no salt, which has ecological advantages.

(IA-IF) mainly have a violet to reddish-blue nuance.  
Dwg.0/0

L22 ANSWER 12 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
AN 1996-487384 [49] WPIDS  
DNC C1996-152746  
TI Hot melt adhesive compsn. for polymer compatibility for bookbinding -  
contg. biodegradable thermoplastic cellulose or starch ester polymer,  
plasticiser, wax, antioxidant and sucrose benzoate tackifier..  
DC A11 A23 A81 E13 E19 G03  
IN PAUL, C W; SHARAK, M L  
PA (NATT) NAT STARCH & CHEM INVESTMENT HOLDING COR  
CYC 9  
PI EP 741177 A2 19961106 (199649)\* EN 11p  
R: BE DE FR GB IT LU NL SE  
US 5574076 A 19961112 (199651) 6p  
EP 741177 A3 19970319 (199722)  
EP 741177 B1 19990303 (199913) EN  
R: BE DE FR GB IT LU NL SE  
DE 69601590 E 19990408 (199920)  
ADT EP 741177 A2 EP 1996-105289 19960402; US 5574076 A US 1995-433285  
19950503; EP 741177 A3 EP 1996-105289 19960402; EP 741177 B1 EP  
1996-105289 19960402; DE 69601590 E DE 1996-601590 19960402, EP  
1996-105289 19960402  
FDT DE 69601590 E Based on EP 741177  
PRAI US 1995-433285 19950503  
AB EP 741177 A UPAB: 19961205  
A hot melt adhesive compsn. comprises:  
(a) 10-90 wt.% of a biodegradable thermoplastic adhesive polymer of  
hydroxybutyrate/valerate, polylactide homo- or copolymers, hydroxypropyl  
cellulose, cellulose or starch esters with a deg. of substitution less  
than 2.5, hydroxy functional or aliphatic polyesters;  
(b) 5-80 wt.% sucrose benzoate;  
(c) 0-80 wt.% of a plasticising diluent of phthalate, liq., benzoate  
or phosphate plasticisers, PEG or derivs.; liq. rosin derivs. having Ring  
and Ball m.pt. below 60 deg. C, vegetable or animal oils;  
(d) 0-50 wt.% of waxes of N-(2-hydroxy-ethyl)-12-hydroxy stearamide,  
hydrogenated castor oil, oxidised synthetic waxes, polyethylene oxide with  
a Mw over 1000, or functionalised synthetic waxes; and  
(e) 0-3 wt.% antioxidant.  
USE - Used e.g. for bookbinding, bag ending, case or carton sealing;  
or for disposable diapers, or sanitary prods.  
ADVANTAGE - The tackifier used in the hot melt adhesive is  
biodegradable and compatible with the usual adhesive polymer bases.  
Dwg.0/0

L22 ANSWER 13 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
AN 1996-333948 [33] WPIDS  
DNC C1996-105494  
TI Prepn. of cellulose ester(s) having degree of  
substitution of 0.1-3.0 - by contacting cellulose material,  
carboxamide or urea-based diluent, acylating reactant and  
insoluble sulphonic acid resin catalyst.  
DC A11 A97 F01 G02 J04  
IN EDGAR, K J  
PA (EACH) EASTMAN CHEM CO  
CYC 20  
PI WO 9620961 A1 19960711 (199633)\* EN 45p  
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE  
W: CA JP MX

EP 800538 A1 19971015 (199746) EN  
 R: DE FR GB NL SE  
 MX 9704973 A1 19971001 (199901)  
 JP 10511729 W 19981110 (199904) 31p  
 US 6160111 A 20001212 (200067)  
 EP 800538 B1 20010509 (200128) EN  
 R: DE FR GB NL SE  
 DE 69520891 E 20010613 (200141)  
 ADT WO 9620961 A1 WO 1995-US16563 19951215; EP 800538 A1 EP 1995-943895  
 19951215, WO 1995-US16563 19951215; MX 9704973 A1 MX 1997-4973 19970627;  
 JP 10511729 W WO 1995-US16563 19951215, JP 1996-521056 19951215; US  
 6160111 A Cont of US 1994-367524 19941230, US 1996-758977 19961202; EP  
 800538 B1 EP 1995-943895 19951215, WO 1995-US16563 19951215; DE 69520891 E  
 DE 1995-620891 19951215, EP 1995-943895 19951215, WO 1995-US16563 19951215  
 FDT EP 800538 A1 Based on WO 9620961; JP 10511729 W Based on WO 9620961; EP  
 800538 B1 Based on WO 9620961; DE 69520891 E Based on EP 800538, Based on  
 WO 9620961  
 PRAI US 1994-367524 19941230; US 1996-758977 19961202  
 AB WO 9620961 A UPAB: 19960823

Preparing **cellulose esters** having a total degree of substitution or average number of acyl substituents per anhydroglucose being (DS/AGU) of 0.1-3.0 comprises contacting; (i) a **cellulose** material; (ii) a solubilising amt. of a solvent system comprising ether a carboxamide diluent, having a carboxamide portion of structure (I); R<sub>4</sub>R<sub>5</sub>NCOCR<sub>6</sub>R<sub>7</sub>R<sub>8</sub> where R<sub>4</sub>-R<sub>8</sub> = H, 1-20C opt. branched alkyl, phenyl, naphthyl, 1-20C opt. branched alkenyl; or a urea-based diluent having a urea portion of structure (II); R<sub>9</sub>R<sub>10</sub>CONR<sub>11</sub>R<sub>12</sub> where R<sub>9</sub>-R<sub>12</sub> = H, 1-20C opt. branched alkenyl; (iii) an **acylating** reagent selected from: (a) an acid chloride and opt. an acid acceptor; (b) a carboxylic **acid anhydride**; (c) diketene, ketone, 2,2,6-trimethyl-2H-1,3-dioxin-4-one, and an **ester** of acetoacetic acid; (d) an **ester** of carboxylic acid; and combinations thereof and (iv) an insoluble sulphonc acid resin catalyst; wherein (i) and (ii) are contacted first and (iii) and (iv) are contacted with the prod. of (i) and (ii) in any order. Also claimed is a prod. prepd. as above.

USE - This process enables the economical, direct synthesis of **cellulose esters** for plastics, film, fibre and coatings applications.

ADVANTAGE - In this process it is possible to use **cellulose** with a lower alpha content and a lower molecular wt.. The process enables synthesis of very high molecular wt. **cellulose esters**, partially or fully substd. **esters** of **cellulose** having a total D.S. of < 3.0 with long chain (> 4C) carboxylic acids and opt. short chain acids. Partially substd. **cellulose esters**, having good solubility in a wide range of organic solvents and opt. with high molecular wt. are obtd. directly from the reaction mixt. by standard isolation techniques.

Dwg.0/0

L22 ANSWER 14 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1996-333947 [33] WPIDS

DNC C1996-105493

TI Prepn of **cellulose ester(s)** having degree of substitution of 0.1-3.0 - by contacting **cellulose** material, carboxamide or urea-based diluent, **acylating** reactant and titanium-contg. cpd..

DC A11 E19 F01 G02

IN BOGAN, R T; EDGAR, K J

PA (EACH) EASTMAN CHEM CO

CYC 20

PI WO 9620960 A1 19960711 (199633)\* EN 54p  
 RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE  
 W: CA JP MX  
 EP 800537 A1 19971015 (199746) EN  
 R: DE FR GB NL SE  
 US 5750677 A 19980512 (199826)  
 MX 9704972 A1 19971001 (199901)  
 JP 10511728 W 19981110 (199904) 39p  
 US 5929229 A 19990727 (199936)  
 EP 800537 B1 20020502 (200230) EN  
 R: DE FR GB NL SE  
 MX 202894 B 20010704 (200238)  
 DE 69526594 E 20020606 (200245)  
 ADT WO 9620960 A1 WO 1995-US16562 19951215; EP 800537 A1 EP 1995-943477  
 19951215, WO 1995-US16562 19951215; US 5750677 A US 1994-367025 19941230;  
 MX 9704972 A1 MX 1997-4972 19970627; JP 10511728 W WO 1995-US16562  
 19951215, JP 1996-521055 19951215; US 5929229 A Div ex US 1994-367025  
 19941230, US 1998-36646 19980306; EP 800537 B1 EP 1995-943477 19951215, WO  
 1995-US16562 19951215; MX 202894 B MX 1997-4972 19970627; DE 69526594 E DE  
 1995-626594 19951215, EP 1995-943477 19951215, WO 1995-US16562 19951215  
 FDT EP 800537 A1 Based on WO 9620960; JP 10511728 W Based on WO 9620960; US  
 5929229 A Div ex US 5750677; EP 800537 B1 Based on WO 9620960; DE 69526594  
 E Based on EP 800537, Based on WO 9620960  
 PRAI US 1994-367025 19941230; US 1998-36646 19980306  
 AB WO 9620960 A UPAB: 19960823

Preparing **cellulose esters** having a total degree of substitution or average number of acyl substituents per anhydroglucose ring (DS/AGU) of 0.1-3.0 comprises contacting: (i) a **cellulose** material; (ii) a solubilising amt. of a solvent system comprising either a carboxamide diluent, having a carboxamide portion of structure (I); R<sub>4</sub>R<sub>5</sub>NCOCR<sub>6</sub>R<sub>7</sub>R<sub>8</sub> where R<sub>4</sub>-R<sub>8</sub> = H, 1-20C opt. branched alkyl, phenyl, naphthyl, 1-20C opt. (branched) alkenyl; or a urea-based diluent having a urea portion of structure (II); R<sub>9</sub>R<sub>10</sub>NCNRR<sub>11</sub>R<sub>12</sub> where R<sub>9</sub>-R<sub>12</sub> = H, 1-20C opt. branched alkyl, phenyl naphthyl, 1-20C opt. (branched) alkenyl; (iii) an **acylating** reagent selected from: (a) an acid chloride and opt. an acid acceptor; (b) a carboxylic **acid anhydride**; (c) diketene, ketene, 2,2,6-trimethyl-4H-1,3-dioxin-4-one, and an **ester** of acetoacetic acid; (d) an **ester** of carboxylic acid; and their combinations; and (iv) a Ti-contg. cpd.; where (i) and (ii) are contacted first and (iii) and (iv) are contacted with the prod. of (i) and (ii) in any order. Also claimed is a prod. prepd. as above.

USE - This process enables the economical, direct synthesis of **cellulose esters** for plastics, film, fibre and coatings applications.

ADVANTAGE - In this process it is possible to use **cellulose** with a lower alpha content and a lower molecular wt. The process enables synthesis of very high molecular wt. **cellulose esters**, partially or fully substd. **esters** of **cellulose** having a total D.S. of less than 3.0 with long chain (greater than 4C) carboxylic acids and opt. short chain acids. Partially substd. **cellulose esters**, having good solubility in a wide range of organic solvents and opt. with high molecular wt. are obtd. directly from the reaction mixt. by standard isolation techniques.  
 Dwg.0/0

L22 ANSWER 15 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1994-206275 [25] WPIDS  
 DNC C1994-094364

TI Coated granular fertiliser allowing complete elution of fertiliser - comprises fertiliser granule coated with film comprising compsn.

comprising ethylenically unsatd. auto-oxidisable cpd. and biodegradable powders contg. saccharide in resin.

DC A97 C04

PA (CHCC) CHISSO CORP

CYC 1

PI JP 06144981 A 19940524 (199425)\* 9p

JP 3309325 B2 20020729 (200256) 9p

ADT JP 06144981 A JP 1992-316385 19921030; JP 3309325 B2 JP 1992-316385 19921030

FDT JP 3309325 B2 Previous Publ. JP 06144981

PRAI JP 1992-316385 19921030

AB JP 06144981 A UPAB: 19940810

Fertiliser granule is coated with a film comprising a compsn. comprising at least 1 auto-oxidisable cpd. having at least one ethylenically unsatd. double bond in one molecule, and at least one biodegradable powders contg. a saccharide polymer or its deriv. dispersed in a resin.

The auto-oxidisable cpd. is pref. selected from fatty acids, fatty esters, oils and fats. The biodegradable powder contg. a saccharide polymer and its deriv. is pref. selected from starch, its deriv. grain powder, cellulose, agar powder, alginic acid and its deriv.. The amt. of auto-oxidisable cpd. is pref. 0.5-10 wt.%. The amt. of the biodegradable powder contg. the saccharide polymer and its deriv. dispersed in the compsn. is pref. 0.5-20 wt%.

The resin contains at least 1 of olefin polymer, olefin copolymer, vinylidene chloride polymer or vinylidene chloride copolymer. The olefin polymer, olefin copolymer or vinylidene chloride copolymer is pref. selected from a polymer made of at least 1 of ethylene, propylene and butene, ethylene-CO copolymer, ethylene-vinyl ketone copolymer, vinylidene chloride-vinyl chloride copolymer or vinylidene chloride-acrylate copolymer. The resin pref. contains a powder filler e.g. talc, CaCO<sub>3</sub>, silica, zeolite, diatomaceous earth, clay, or metal oxide powder.

USE/ADVANTAGE - Coated granule fertiliser has a biodegradable and auto-oxidising and decomposing coat which allows complete elution of the fertiliser component.

Dwg.0/6

L22 ANSWER 16 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1994-026000 [03] WPIDS

DNN N1994-020255 DNC C1994-011993

TI Biodegradable, liq. impervious multilayer films - comprises composite structures of biodegradable thermoplastic polymers, suitable as back sheets in disposable absorbent prods..

DC A96 D22 F07 P34 P73

IN KOGER, T J; WNUK, A J; YOUNG, T A; YOUNG, A T; WUNUK, A J

PA (PROC) PROCTER & GAMBLE CO

CYC 48

PI WO 9400293 A1 19940106 (199403)\* EN 50p

RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE

W: AU BB BG BR BY CA CZ FI HU JP KP KR KZ LK MG MN MW NL NO NZ RO RU SD SK UA VN

AU 9345339 A 19940124 (199420)

FI 9406071 A 19941223 (199512)

US 5391423 A 19950221 (199513) 17p

NO 9404985 A 19950224 (199517)

EP 647184 A1 19950412 (199519) EN

R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

CN 1085493 A 19940420 (199527)

JP 08500062 W 19960109 (199642) 62p

NO 300579 B1 19970623 (199732)

AU 681589 B 19970904 (199744)  
 EP 647184 B1 19980311 (199814) EN 22p  
 R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE  
 DE 69317423 E 19980416 (199821)  
 ES 2113542 T3 19980501 (199824)  
 MX 185605 B 19970813 (199847)  
 BR 9306621 A 19981208 (199903)  
 SG 65587 A1 19990622 (199935)  
 PH 30066 A 19961108 (199953)#  
 CA 2138120 C 20000718 (200045) EN  
 KR 262356 B1 20000901 (200134)  
 JP 3242658 B2 20011225 (200203) 22p

ADT WO 9400293 A1 WO 1993-US5617 19930614; AU 9345339 A AU 1993-45339  
 19930614; FI 9406071 A WO 1993-US5617 19930614, FI 1994-6071 19941223; US  
 5391423 A Cont of US 1992-905057 19920626, US 1993-126672 19930924; NO  
 9404985 A WO 1993-US5617 19930614, NO 1994-4985 19941222; EP 647184 A1 EP  
 1993-915312 19930614, WO 1993-US5617 19930614; CN 1085493 A CN 1993-109567  
 19930626; JP 08500062 W WO 1993-US5617 19930614, JP 1994-502403 19930614;  
 NO 300579 B1 WO 1993-US5617 19930614, NO 1994-4985 19941222; AU 681589 B  
 AU 1993-45339 19930614; EP 647184 B1 EP 1993-915312 19930614, WO  
 1993-US5617 19930614; DE 69317423 E DE 1993-617423 19930614, EP  
 1993-915312 19930614, WO 1993-US5617 19930614; ES 2113542 T3 EP  
 1993-915312 19930614; MX 185605 B MX 1993-3853 19930625; BR 9306621 A BR  
 1993-6621 19930614, WO 1993-US5617 19930614; SG 65587 A1 SG 1996-7960  
 19930614; PH 30066 A PH 1993-46398 19931008; CA 2138120 C CA 1993-2138120  
 19930614, WO 1993-US5617 19930614; KR 262356 B1 WO 1993-US5617 19930614,  
 KR 1994-704725 19941224; JP 3242658 B2 WO 1993-US5617 19930614, JP  
 1994-502403 19930614

FDT AU 9345339 A Based on WO 9400293; EP 647184 A1 Based on WO 9400293; JP  
 08500062 W Based on WO 9400293; NO 300579 B1 Previous Publ. NO 9404985; AU  
 681589 B Previous Publ. AU 9345339, Based on WO 9400293; EP 647184 B1  
 Based on WO 9400293; DE 69317423 E Based on EP 647184, Based on WO  
 9400293; ES 2113542 T3 Based on EP 647184; BR 9306621 A Based on WO  
 9400293; CA 2138120 C Based on WO 9400293; JP 3242658 B2 Previous Publ. JP  
 08500062, Based on WO 9400293

PRAI US 1992-905057 19920626; US 1993-126672 19930924; PH 1993-46398  
 19931008

AB WO 9400293 A UPAB: 19940303

Multilayer film comprises a first polymer film layer and a second polymer  
 film layer joined to the first layer. The multilayer film has following  
 characteristics: (a) biodegradability; (b) liq. impermeability; (c) a  
 machine direction (MD) tensile modulus from  $6.895 \times 10^8$  dynes/sq.cm.  
 to  $0.895 \times 10^9$  dynes/sq.cm., (d) on MD tear strength of at least 70g  
 per 25.4 microns of thickness; (e) a cross machine (CD) tear strength of  
 at least 70g per 25.4 microns of thickness; (f) an impact strength of at  
 least 12 cm as measured by falling ball drop; (g) a moisture transport  
 rate less than 0.0012g per sq. cm. per 16 hours; (h) a modulus at 60 deg.  
 C of at least  $5.52 \times 10^7$  dynes/sq.cm, and (i) a thickness of 12-75  
 microns.

USE/ADVANTAGE - The films are suitable for use as backsheets in  
 absorbent articles such as diapers, sanitary napkins and pantliners. The  
 films may also be used in a sealable packaging film, plastic garbage bags  
 etc.. Absorbent articles according to the invention are compostable to a  
 greater extent than conventional absorbent articles which employ a  
 polyolefin, typically a polyethylene backsheet.  
 Dwg.0/0

L22 ANSWER 17 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1993-164487 [20] WPIDS  
 DNC C1993-073150



TI Hydrolysis of polysaccharide under mild conditions - by reacting with poly hydroxy (acid) deriv. of 2-amido-thiazole and opt. phospholipid.

DC D17 E13

PA (ASAE) ASAHI DENKA KOGYO KK; (OKAT-I) OKATSU S

CYC 1

PI JP 05097904 A 19930420 (199320)\* 10p

JP 3020306 B2 20000315 (200018) 10p

ADT JP 05097904 A JP 1991-129686 19910531; JP 3020306 B2 JP 1991-129686 19910531

FDT JP 3020306 B2 Previous Publ. JP 05097904

PRAI JP 1991-129686 19910531

AB JP 05097904 A UPAB: 19931113

Polysaccharides, are hydrolysed in the presence of a cpd. of formula (I) (X:) or H<sub>2</sub>; n = 2-6; R<sub>1</sub>,R<sub>2</sub> = independently 8-30C alkyl gp.; R<sub>3</sub>=H or 1-8C acyl gp.).

X is pref O and a phospholipid is pref also present.

As the polysaccharides, **cellulose**, amylose, chitin and chitosan and desirable. The cpd. of formula (I) is synthesised from cystine and monosaccharide through **acylation**, amidation, deacylation and **oxidation**.

ADVANTAGE - The method can hydrolyse polysaccharides industrially under mild condition.

Dwg.0/0

L22 ANSWER 18 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1990-280997 [37] WPIDS

DNC C1990-121564

TI Synthesis of **cellulose esters** - using mixt. of tri fluoro-acetic acid and fatty acid **anhydride** as **acylating** mixt., to increase efficiency.

DC A11 E13 E16 F01

IN CHEMERIS, M M; EREMENKO, N V; SALIN, B N

PA (UYAL-R) ALTAI UNIV

CYC 1

PI SU 1525168 A 19891130 (199037)\*

ADT SU 1525168 A SU 1987-4206246 19870304

PRAI SU 1987-4206246 19870304

AB SU 1525168 A UPAB: 19930928

Use of a mixt. of trifluoroacetic acid (I) and anhydride of fatty 1-4C acid (II) as the **acylating** mixt. in prodn. of **cellulose** (III) **esters**, increases the efficiency of the process. The **acylation** is carried out at 30-60 deg. with molar ratio (I): (II): (III) = 51-102:17:1, and is followed by pouring the syrupy reaction mixt. into water, filtering, washing and drying.

USE/ADVANTAGE - Simpler process, in prodn. of films., fibres and plastics. Bul.44/30.11.89

0/0

L22 ANSWER 19 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1985-234974 [38] WPIDS

DNC C1985-102181

TI Prepn. of mixed **cellulose ester(s)** soluble in DMF - by dissolving starting material in mixt. of DMF and di nitrogen tetra oxide, and **acylating** with acetic anhydride.

DC A11 F01 G02

IN EMELYANOV, Y U G; GRINSHPAN, D D; KAPUTSKII, F N

PA (BELU) PHYS CHEM PROBLEMS

CYC 1

PI SU 1142480 A 19850228 (198538)\* 3p

ADT SU 1142480 A SU 1985-3654864 19851024  
 PRAI SU 1983-3654864 19831024; SU 1985-3654864 19851024  
 AB SU 1142480 A UPAB: 19930925

Mixed **cellulose esters** soluble in DMF are obtd. when 1 pt. of **cellulose** is first dissolved in a mixt. contg. 7-15 pts. DMF+1.7-2.2 pts. N2O4, and the resulting soln. **acylated** for 2-4 hours at 40-50 deg. with 7-15 pts. of acetic anhydride in the presence of 0.45-0.18 pts. of acetamide. Catalytic amts. of H2SO4 are also added.

Tests show that addn. of acetamide is the necessary condition for producing soluble acetonitrate esters for subsequent forming of fibres, films, membranes, coatings, etc.

ADVANTAGE - Solubility of product in DMF. Bul.8/28.2.85

0/0

L22 ANSWER 20 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1984-264153 [43] WPIDS  
 DNC C1984-111801

TI Level dyeing and softening of polyamide or **cellulose** fibres - using alkanolamine salts of partial **phosphoric acid ester(s)** of alkylene oxide addn. prods. of fatty acid **acylated** poly alkylene poly amine.

DC A23 A35 F06  
 IN BERGER, W; JUNG, K  
 PA (BOHT) BOEHME KG TH  
 CYC 1

PI DE 1619372 A 19710311 (198443)\* 9p

ADT DE 1619372 A DE 1967-B903542 19670719

PRAI DE 1967-B903542 19670719

AB DE 1619372 A UPAB: 19930925

Dyeing is carried out in the presence of the alkanolamine salts of partial polyphosphoric acid esters of alkylene oxide addn. prods. of fatty acid **acylated** polyalkylenepolyamines, esp. ethanolamine- and/or propanolamine salts of partial **phosphoric acid esters** of adducts of 10-20 alkylene oxide units with fatty acid **acylated** polyalkylenepolyamines.

The esters are made by (i) converting polyalkylenepolyamines such as diethylenetriamine, triethylenetetramine, etc., into the mono-or diamides with fatty acids or fatty acid mixts., (ii) converting into alkylene oxide adducts by addn of 10-20 ethylene oxide units, (iii) reacting with P4O10 to form the acid ester and (iv) neutralising with alkanolamines.

ADVANTAGE - The partial polyphosphoric acid esters are esp. useful as replacements for natural lecithin in dyeing processes, and in comparison with natural lecithin are light coloured, resistant to normal processing temps., resistant to rotting, and have excellent dye dispersion characteristics. The treated fabrics have a soft handle.

0/0

L22 ANSWER 21 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1983-808287 [45] WPIDS  
 DNC C1983-107631

TI Mixed **cellulose ester** prepn. - by **acylation** with mono basic alkanolic acid anhydride mixt. in acid nitrile in homogeneous or heterogeneous phase.

DC A11  
 IN NAUNDORF, G  
 PA (THIN-I) THINIUS K  
 CYC 1

PI DD 68493 A 19690820 (198345)\* 3p

PRAI DD 1969-118994 19690727

AB DD 68493 A UPAB: 19930925

In the parent patent, cellulose is esterified with monobasic alkanolic acids in acid nitriles of these acids as diluents. The reaction can take place in the homogeneous or heterogeneous phase, depending on the combination of the acid nitrile with the anhydride of the esterifying acid.

In this addn., the lower aliphatic acid nitriles, e.g. MeCN or EtCN, can be used in the prepn. of mixed acids or cellulose with AcOH, as one component, and propionic acid and/or butyric acid, as the other component. The course of esterification in the homogeneous or heterogeneous phase in an acid nitrile can be adjusted by the molar ratio of the acid anhydrides.

According to a given diagram, cellulose acetopropionate is prepd. in the heterogeneous phase on reacting 1.5 mol propionic acid anhydride and 7.5 mol Ac<sub>2</sub>O with 1 mol cellulose, in MeCN as diluent. On reversing the molar ratios, the cellulose mixed ester can only be prepd. in the homogeneous phase. The molar ratio between 7 mol Ac<sub>2</sub>O and 2 mol (EtCO)<sub>2</sub>O, on the one hand, and 6 mol Ac<sub>2</sub>O and 3 mol (EtCO)<sub>2</sub>O on the other hand, should be avoided as it denotes a transition range from heterogeneous to homogeneous acylation, in which the condition of the system impedes handling.

0/1

L22 ANSWER 22 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1983-781705 [40] WPIDS

DNC C1983-096678

TI Prepn. of cellulose ester sorbents - by acylating powdered cellulose with di carboxylic acid chloride, used in chromatography.

DC A11 A89 J04

IN KLYAVINSH, M K; PRIKULIS, A A

PA (UYLA) UNIV LATV

CYC 1

PI SU 979362 A 19821210 (198340)\* 4p

PRAI SU 1981-3285044 19810430

AB SU 979362 A UPAB: 19930925

Cellulose esters used as sorbents in sepn. and purificn. of biological materials etc. by chromatography are obtd. by acylating cellulose in powder form with a 2-10C dicarboxylic acid chloride in an aprotic solvent at 20-60 deg.C. for 4-6 hrs. The method is quicker than in prior art.

In a pref. process, 0.1 mols of acid chloride are used per 10 g. of cellulose and the acylation is carried out in the presence of 0.05 mols of tertiary base, e.g. pyridine. Suitable solvents are DMF, dioxan acetone etc.

0/0

L22 ANSWER 23 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1978-80782A [45] WPIDS

TI Alpha-branched aliphatic carboxylic acid anhydride prodn. - by liq. phase oxidising the corresp. aldehyde in presence of copper or copper cpd..

DC A60 E17

PA (MITU) MITSUBISHI CHEM IND LTD

CYC 1

PI JP 53112804 A 19781002 (197845)\*

JP 60055493 B 19851205 (198602)

PRAI JP 1977-28322 19770315

AB JP 53112804 A UPAB: 19930901

Prepn. of an alpha-branched aliphatic carboxylic acid **anhydride** comprises liq. phase oxidising on alpha-branched aliphatic aldehyde with molecular oxygen in the presence of copper or a copper compound.

Pref. the reaction is 10 degrees C to 100 (30-80) degrees C 30-80 degrees C. The reaction pressure is atmospheric-10 kg/cm<sup>2</sup>. pref. slightly elevated. Continuous removal of water from the reaction system raises the yield of the product. Pref. solvents include ethyl acetate, acetone, benzene, etc. which are relatively inert to the oxidn.

Prod. is obtd. in good yield with less by-products. The prod. is useful for prodn. of polymers such as **cellulose ester** or as an **acylating agent** or a general synthetic intermediate.

L22 ANSWER 24 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1973-77794U [51] WPIDS

TI Reactive copper-contg dyes - for leather and cellulosic fibres.

DC E21 F06

PA (SANO) SANDOZ AG

CYC 1

PI CH 542906 A (197351)\*

PRAI CH 1968-17930 19680813

AB CH 542906 A UPAB: 19930831

Reactive dyes for dyeing leather and dyeing or padding natural or regenerated **cellulose** fibres esp by exhaust process have formula (I) (where -NHZ may be linked to A or B; A and B or opt. substd. -SO<sub>3</sub>H-contg. gps of the benzene or naphthalene series and Z is an acyl gp which contains at least one substituent released as an anion and/or a C-C multiple bond capable of addn., a halopyrimidyl or halotriazinyl gp.). They are prepd. by reacting one mole of an amino dye of formula (II) (where -SO<sub>3</sub>H is in o-posn to azo gp) with 1 mole **acylating agent** contg. at least 1 substituent releasable as an anion and/or a C-C multiple bond capable of addn., or with a polyhalopyrimidine or polyhalotriazine, and **oxidising prod** in the presence of a Cu-yielding cpd.

L22 ANSWER 25 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1970-94657R [51] WPIDS

TI Disperse disazo dyestuffs.

DC A11 A23 A64 E21 F06

PA (MITS) MITSUBISHI CHEM INDS LTD

CYC 1

PI JP 45040189 B (197051)\*

PRAI JP 1968-1582 19680113

AB JP 70040189 B UPAB: 19930831

Novel disperse disazo dyestuffs of formula:- (where A is benzene nucleus opt. contng. a halogen, lower alkyl or lower alkoxy; B is benzene or naphthalene nucleus opt. substd. as in A; D is benzene nucleus opt. contng. a halogen, lower alkyl or gp., -C<sub>2</sub>H<sub>4</sub>Y; Y is CN or opt. substd. lower alkoxycarbonyl; R' is lower alkyl, lower oxyalkyl, lower acyl, lower alkoxycarbonyl, lower alkylcarbonyl, lower acyloxyalkyl or benzoyl), are prepared by reacting a disazo cpd. (where R' = H) with either (1) X-R1 (X is halogen), (2) lower fatty acid **anhydride**, (3) arylsulphonic acid **ester**, (4) alkyl epoxide, (5) acid halide or aliphatic acid **anhydride acylating agent**. Used to dye polyester or **cellulose ester** fibres a deep orange-yellow colour, which is water and light fast.

L22 ANSWER 26 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1968-12530Q [00] WPIDS

TI Bis v-triazolyl-2-dibenzothiophene-s-dioxides as.

DC A00 A60 E23 F06

PA (FARB) FARBENFAB BAYER AG

CYC 7

PI NL 6803885 A (196800)\*  
 BE 712484 A (196801)  
 GB 1155229 A (196801)  
 CH 490562 A (197029)  
 CA 863958 A (197108)  
 JP 46008781 B (197110)  
 CH 481974 A 19691130 (198329)  
 DE 1670828 A 19710311 (198443)

PRAI DE 1967-F501882 19670320

AB NL 6803885 A UPAB: 19930831

Optical brighteners consist of

bis(v-triazolyl-2)-dibenzothiophene-S-dioxides (I). R' = H, opt. substd. alkyl or aryl; R2 = H, CN, opt. substd. alkyl or aryl, COOH, ester, carbonamide, or acylated amino; X = H or the equivalent of a cation; and n = 0-4.

(I) are prepd. by (a) coupling diazo cpds. of aminodibenzothiophene-S-dioxides (II) with enamines (III) (where R3 = CN, carboxylic ester or an opt. substd. carbonamide group), (b) converting the disazo cpds. into Cu complexes by reaction with a complex CuII salt soln., (c) oxidising the Cu complexes by heating to the corresponding bis-v-triazolyl-2-cpds., (d) opt. hydrolysing the CN, carboxylic ester or carbonamide groups to COOH, and (e) opt. sulphonating with conc. H2SO4.

(I) are useful optical brighteners for natural and synthetic polymers, including fibres, films and mouldings of polyamides, polyesters, PVC, polyacrylonitrile and cellulose acetates.

A fabric consisting of poly-Epsilon-caprolactam fibres was treated in an aqs. bath contg. 0.2 g./l. of cpd. (I) (R' = C6H5O3SNa; R2 = H) and 2 g./l. Na chlorite, at a bath ratio of 1:40, for 30 mins. at 80-90 deg.C. After rinsing and drying, the dry fabric was given a brightening effect.